Preliminary
Amphibian and Reptile Survey
of the
Lewis and Clark National Forest: 1994

A Report to:

USDA Forest Service

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ABSTRACT

A total of 40 surveys and several additional sightings were made in the Lewis and Clark National Forest (L&CNF) between May and September 1994. Most were surveys of ponds, lakes, seeps, streams or other wetlands, made by 1 or 2 individuals. Each survey took 10-200 person-minutes and consisted of a thorough search of the wetland perimeter and netting of near shore aquatic habitats for adults, eggs, larvae, and tadpoles. Stream sampling was done by hand and dipnet. Seeps were checked by rolling over rocks and logs in and near wet areas. In addition to surveys, sightings were made from road kills, vocal identifications or fortuitous sightings by other reliable individuals.

Localized areas across the entire forest were covered in the survey, with specific locations determined largely by priorities set by Mike Enk, Fisheries Biologist for the Lewis and Clark National Forest.

Six amphibians are reported from the L&CNF: Long-toed Salamander (*Ambystoma macrodactylum*), Tailed Frog (*Ascaphus truei*), Western Toad (*Bufo boreas*), Northern Chorus Frog (*Pseudacris triseriata*), Northern Leopard Frog (*Rana pipiens*), and Spotted Frog (*Rana pretiosa)*. The Spotted Frog was the most widespread amphibian throughout the forest. The Tailed Frog and Long-toed Salamander were found in a few locations on the Rocky Mountain Ranger District (RMRD). The Western Toad was found in very small numbers on the RMRD in 1994. Historically it has also been reported in the Highwood, Little Belt, and Crazy Mountains; however it was not found during our surveys. Given the apparent region-wide declines in this species, all sightings should be reported. The Northern Leopard Frog was reported historically from a single site on the RMRD and several sites in the Highwood Mountains on the L&CNF; none were found on the L&CNF in this survey. It also has been reported historically from numerous prairie ponds, outside and at lower elevations than L&CNF lands. Northern Leopard Frogs are nearly extirpated from western Montana, and anecdotal evidence indicates a decline elsewhere in Montana (except the southeast corner); all sightings should be reported. The Northern Chorus Frog was common in prairie ponds, primarily outside and lower in elevation than L&CNF lands. Four other prairie-inhabiting amphibians have been recorded in the area, though in some cases well away from L&CNF lands; these include the Tiger Salamander (*Ambystoma tigrinum*), Great Plains Toad (*Bufo cognatu*s), Woodhouseís Toad (*Bufo woodhousii*), and Plains Spadefoot (*Scaphiopus bombifrons*).

Eleven reptiles have been reported from near the L&CNF, but only two have been definitely reported from on the forest: the Western Terrestrial Garter Snake (*Thamnophis elegans*) and Common Garter Snake (*Thamnophis sirtalis*). Both were found in the RMRD and Little Belt Mountains. The Western Terrestrial Garter Snake also was found in the Big Snowy Mountains and there is a specimen record of the Common Garter Snake from the Highwood Mountains. The Rubber Boa (*Charina bottae*) and Racer (*Coluber constrictor*) have been recorded on the Helena NF just to the south and west of the L&CNF and therefore are likely to be found on the L&CNF as well. The Spiny Softshell (*Trionyx spinifera*) is present in large rivers at lower elevations; records include the Musselshell River near Shawmut and perhaps Canyon Ferry Reservoir. This species could also occur on the Smith or Judith Rivers. The following reptiles have been recorded in the area and may eventually be found on

lower elevation L&CNF lands: Painted Turtle (*Chrysemys picta*), Short-horned Lizard (*Phrynosoma douglasi*), Western Hognose Snake (*Heterodon nasicus*), Gopher Snake (*Pituophis catenifer*), Plains Garter Snake (*Thamnophis radix*), and Western Rattlesnake (*Crotalus viridis*).

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Museum records were received from: American Museum of Natural History, Academy of Natural Science, Brigham Young University, California Academy of Science, Carnegie Museum, University of Puget Sound Museum, Field Museum of Natural History, Glacier National Park Museum, Illinois Natural History Survey, University of Kansas, Los Angeles County Museum, Louisiana State University Museum of Zoology, Museum of Comparative Zoology - Harvard, Milwaukee Public Museum, Montana State University Museum, Michigan State University Museum, North Carolina State Museum of Natural History, Northern Louisiana University Museum, University of Colorado Museum, University of Georgia Museum of Natural History, University of Idaho Museum, University of Michigan Museum, University of South Dakota, United States National Museum of Natural History, University of Texas - Arlington, University of Texas - El Paso, and Peabody Museum - Yale. Most museum data were received with the help of Dr. Charles Peterson, Idaho State University, Pocatello.

INTRODUCTION

Many amphibians are apparently declining in the western U.S. and world-wide (Corn and Fogelman 1984, Phillips 1990, Yoffe 1992). Acid rain, ozone depletion, pollution by toxic chemicals and heavy metals, predation and/or competition by exotic species, habitat alteration, climate change, disease, immune system problems, and some combination of these factors have all been suggested as possible causes (Corn and Fogelman 1984, Phillips 1990, Yoffe 1992).

Bass have been introduced into waters on or near the Lewis and Clark National Forest (L&CNF) and have been implicated in declines of native amphibian populations in some areas. Past forestry practices and large scale logging continue to be detrimental to resident herpetofauna (Bury *et al.* 1991). The Tailed Frog (*Ascaphus truei*), present on the L&CNF, is thought to be one of the most sensitive indicators of stream-side and aquatic community health in forested landscapes (R. B. Bury, pers. comm.). Preliminary data indicate the Northern Leopard Frog (*Rana pipiens*) has disappeared over much of its former range in western Montana and is declining in at least some areas of eastern Montana. The US Fish and Wildlife Service now lists the Western Toad (*Bufo boreas*) as a Candidate (C-2) species in Colorado, Wyoming and New Mexico. Apparent declines have recently been reported in northern Idaho (C. Peterson pers. comm.), northwest Montana (Werner and Reichel 1994), Yellowstone National Park (Peterson *et al.* 1992), Wyoming, and Colorado (Carey 1993).

The U.S. Fish and Wildlife Service lists two Montana amphibians and two reptiles as candidate species: the Spotted Frog (C2) (*Rana pretiosa)*, Tailed Frog (C2), Short-horned Lizard (*Phrynosoma douglasi*) and Northern Sagebrush Lizard (*Sceloporus graciosus graciosus*). The U.S. Forest Service Region 1 lists the Coeur díAlene Salamander (*Plethodon idahoensis*) as ìSensitiveî and is considering adding several other amphibians. The Montana Natural Heritage Program and the Montana Department of Fish, Wildlife and Parks list 6 amphibians [Coeur díAlene Salamander, Idaho Giant Salamander (*Dicamptodon aterrimus*), Tailed Frog, Canadian Toad (*Bufo hemiophrys*), Spotted Frog, Wood Frog (*Rana sylvatica*)] and 7 reptiles [Snapping Turtle (*Chelydra serpentina*), Spiny Softshell (*Apalone spinifera*), Short-horned Lizard, Sagebrush Lizard, Western Hognose Snake (*Heterodon nasicus*), Smooth Green Snake (*Opheodrys vernalis*), Milk Snake (*Lampropeltis triangulum*)] as species of special concern in the state. The Northern Leopard Frog and Western Toad (*Bufo boreas*) are being considered for addition to the list. Eight of these species, the Tailed Frog, Western Toad, Spotted Frog, Northern Leopard Frog, Spiny Softshell, Short-horned Lizard, Western Hognose Snake, and Milk Snake occur or potentially occur on the L&CNF.

METHODS AND MATERIALS

Historic locations of amphibians and reptiles were recorded from literature (see Bibliography) and museum specimen records. Records were received from over 20 major museums which have computerized their collections in North America (see Acknowledgments). Locations derived from these sources have been entered into a database and digitized. Records from the Museum of Vertebrate Zoology, Berkeley, California, have yet to be received.

Survey sites were chosen based on 4 criteria: 1) high priority sites as determined by the L&CNF; 2) location of streams, seeps and wetlands on topographic maps; 3) accessibility of the wetlands by roads or hiking trails; and 4) conversations with district biologists regarding stream-seep-wetland locations and past Forest Service surveys. Based on the above, 3-6 sites were chosen daily for surveys. Ten minutes to 2 hours were spent at each site, depending upon the size of the area and what was found. Initially, the entire shoreline, or a major part thereof, was searched by walking slowly along the edge and up into the surrounding vegetation, including rolling over rocks and logs. At regular intervals, the aquatic habitat was sampled for tadpoles or larvae using dipnets. If the initial sampling showed amphibian/reptile species present, further effort was expended in order to get some idea of abundance and distribution.

An attempt was made to capture at least the first few individuals of a species seen at a survey site. The species name was recorded along with developmental stage and sex (if possible); the animals were then released. Representative samples of the more common species in an area were preserved for permanent museum records and are deposited at the Idaho State University Museum. Water temperature, air temperature, and a general description of the area were recorded. Standard data sheets used during this project are given in Appendix 1; the amphibian survey data sheet was developed by U.S. Fish and Wildlife Service and is used extensively by a variety of researchers in the western U.S. Much site-specific data was gathered during these surveys; not all data has been analyzed or is presented in this report, but is available from the Montana Natural Heritage Program.

RESULTS AND DISCUSSION

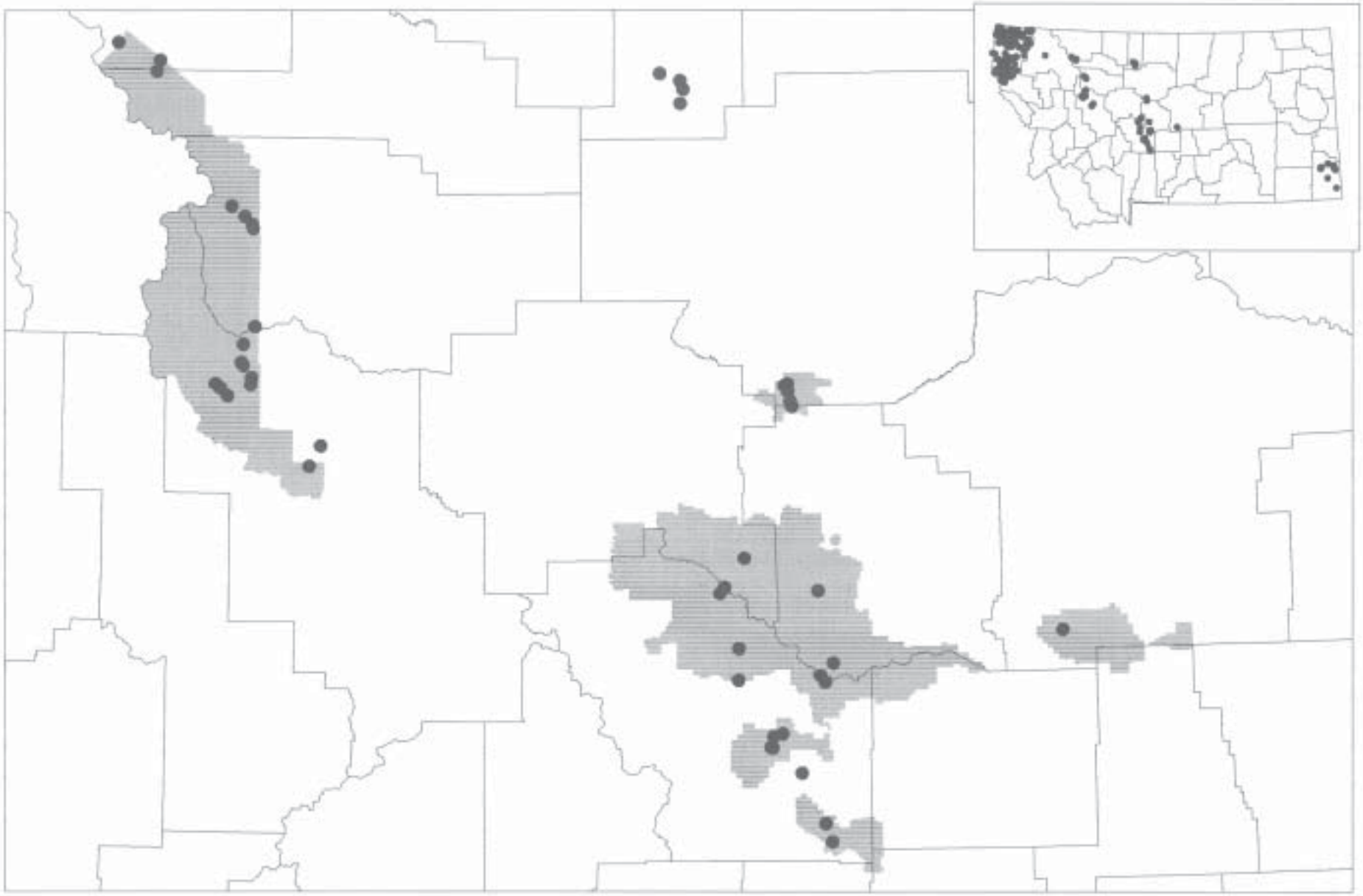
A total of 40 sites were surveyed of which 22 had one or more amphibian or reptile species present (Figure 1, Appendices 2 and 3). Although no species were found at 18 sites, their absence may have been due to the time of day, weather conditions, or other factors at the time of sampling. With three exceptions, all of the sites were on L&CNF land.

In addition to the 40 surveys, there were a number of sightings (i.e. road kills, chance observations) for which data are available and the sightings considered reliable. Species location data from surveys, chance encounters, and historic records (from the literature and museum specimens) are listed in Appendix 4. Distribution maps were created using survey and sighting data and historical records; inset statewide maps for each species are based on sight and specimen records, both recent and historic.

No previous publications or reports on reptiles or amphibians concentrate on the L&CNF area. There is a publication on the Tiber Reservoir area to the north (Mosimann and Rabb 1952). Based museum specimens, publications, surveys and incidental observations, six amphibians and two reptiles have been reported on the L&CNF; an additional four amphibians and nine reptiles may eventually be found to occur there. Six amphibian and two reptile species were actually observed during the study. The following results are presented as a species summary for the Forest as a whole, followed by specific information on each division (and mountain range within the Jefferson Division).

In the following species accounts, the section on ìSimilar Speciesî covers species only which are known or suspected to occur in Montana; outside Montana other confusing species may occur which are not covered in this report. Photos of all Montana amphibians and reptiles may be found in Reichel and Flath (1995).

Herp Survey Locations on or near the Lewis & Clark National Forest



Survey locations from the Montana Natural Heritage Program, 2/28/95

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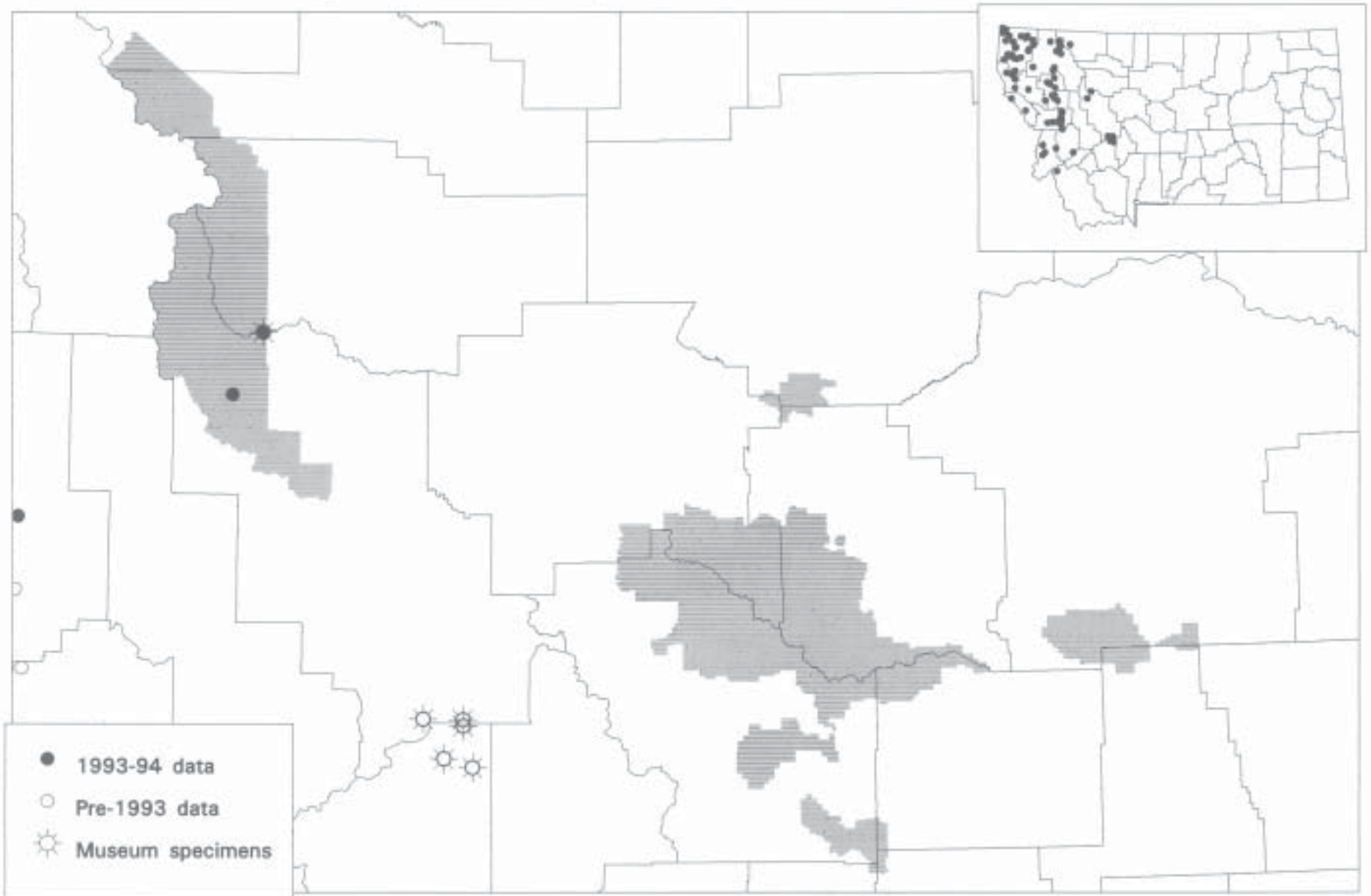
Occurrences of Ambystoma macrodactylum on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Species known to be present on the Lewis and Clark National Forest

Long-toed Salamander (*Ambystoma macrodactylum*)

Description: Adults are dark gray to black with an irregular (and sometimes broken) green to yellow stripe down the middle of the back. Adult snout-vent length varies from 2 to 3.25". All salamanders have smooth moist skin without scales.

Eggs and Larvae: Egg masses are typically laid in small clusters of 5-100 eggs but may be laid singly (Nussbaum *et al.* 1983). Within the clear gelatinous eggs, the embryos are somewhat light-colored, while frog and toad embryos are dark (except in Tailed Frogs). Larval Long-toed Salamanders are typically brown- or gray-colored, are found in ponds, have three external gills, and are relatively small (<1.75" snout-vent) and slender. They are distinguished from Tiger Salamander larvae by the 9-13 gill rakers on the inside of the 3rd gill arch (17-22 rakers on the Tiger Salamander); they are also smaller and lack the large head and mouth.

Similar species: Adult Long-toed Salamanders can be distinguished from Coeur díAlene Salamanders by the longest toe on the hind foot which is longer than the sole and a yellow throat patch. Long-toed Salamanders lack a groove running vertically from nostril to mouth.

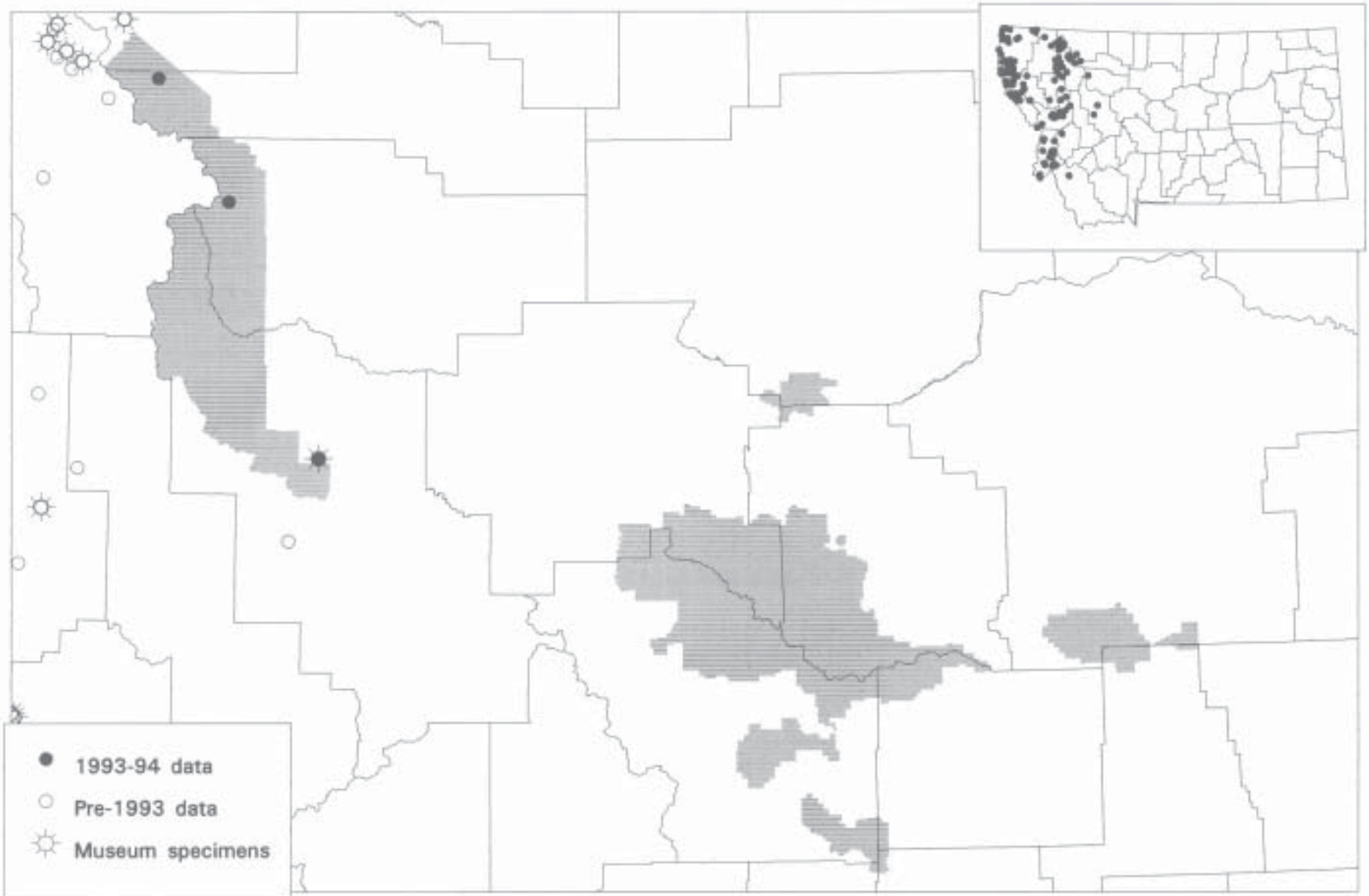
Habitat and Habits: Long-toed Salamanders are found in a wide variety of habitats from sagebrush to nearly alpine. They breed in ponds or lakes (very rarely in slow moving streams), usually those without fish present. Adults go to the breeding ponds immediately after snow-melt and are usually the earliest breeding amphibians in western Montana. In the Pacific Northwest, eggs hatch in 3-6 weeks and metamorphosis occurs after 2-14 months (Nussbaum *et al.* 1983, Leonard *et al.* 1993). Long-toed Salamanders were found in only two locations on the L&CNF. The earliest observation was of three egg masses nearly ready to hatch and about 500 recently-hatched larvae in a marshy, backwater pond off Wood Creek on 27 May 1994. A mid-sized larva was also seen in a beaver pond in Wagner Basin on 5 July 1994. Individuals were found only in the Rocky Mountain Ranger District (RMRD) from 4600 - 5720 ft. elevation. They occurred with the Spotted Frog in the Wood Creek pond.

Surveying: Larvae can readily be seen in ponds during the day and sampled with a dipnet; egg masses may be harder to see. During the breeding season, adults may also be seen in the water, particularly during night surveys. During the rest of the spring, summer and fall, adults may occasionally be found in and under logs on the forest floor. Metamorphosed individuals are active at night, particularly when it is warm and rainy; they may be captured at this time by either night searches or pitfall traps.

Status: The Long-toed Salamander is the most common salamander in western Montana. Preliminary indications are that the Long-toed Salamander is uncommon and locally distributed in the RMRD of the L&CNF, the eastern edge of its range.

Montana Natural Heritage Program rank: G5 S5.

Occurrences of Ascaphus truei on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Tailed Frog (*Ascaphus truei*)

Description: Adults are gray or brown with gray, brown, or occasionally yellow blotches; the skin has a distinctly bumpy texture. The adult has a snout-vent length of 1.5-2" and lacks a tympanum. The outer toe of the hind foot is broader than the other toes. The male has a bulbous ìtailî which acts as a penis.

Eggs and Larvae: Approximately 50 eggs are laid in rosary-like strings attached to the underside of rocks. The tadpole (up to 2" long) is unique in that it has a large mouth modified into a sucker; the color is quite variable.

Similar species: No other frog or toad has the outer toe of the hind foot broader than the other toes; all other frogs and toads have a tympanum behind each eye.

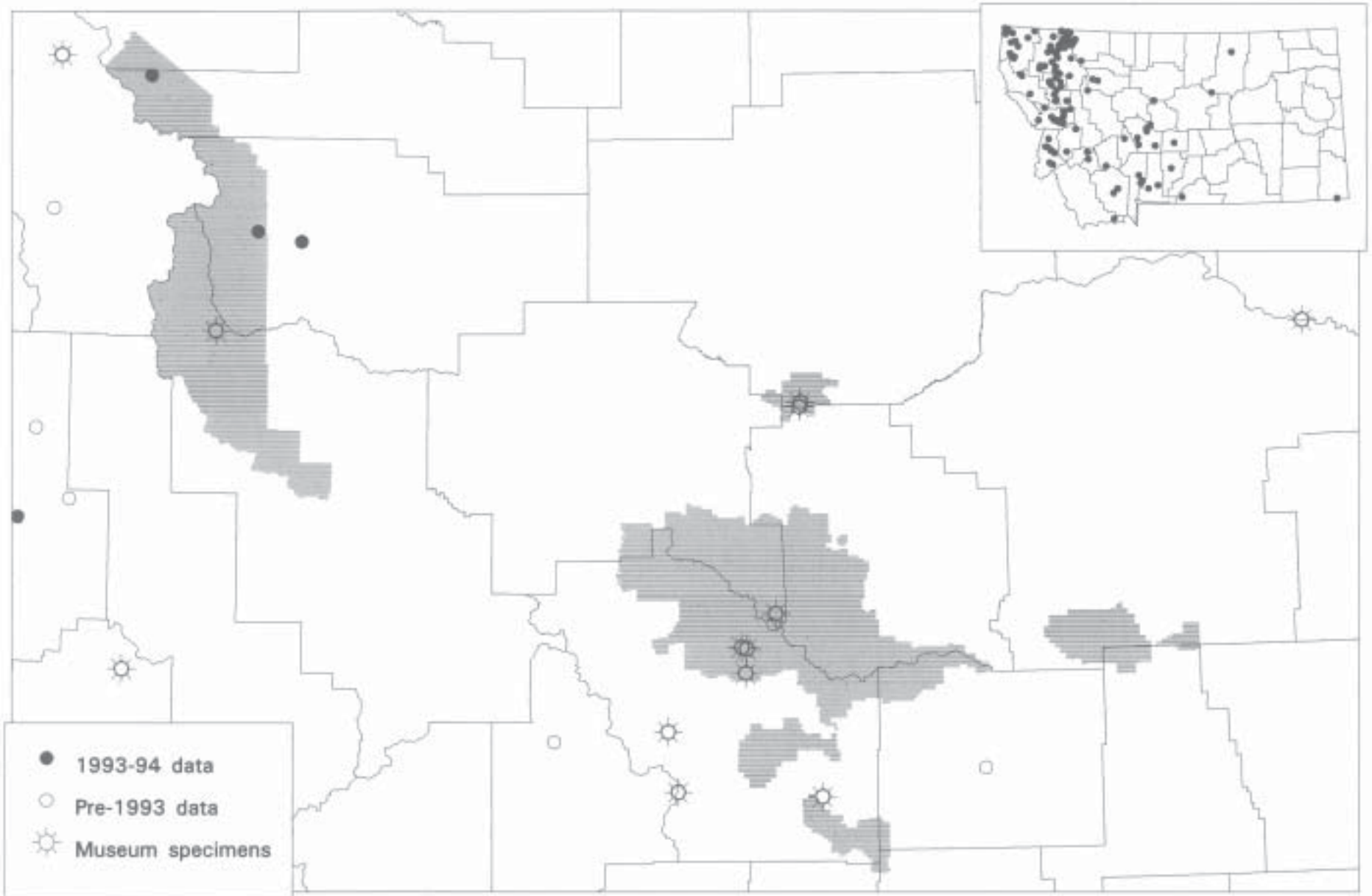
Habitat and Habits: Tailed Frogs are found in and along small, swift, cold mountain streams. In the L&CNF, they have been found only on the RMRD in four locations (Appendix 3, 4). The elevations range from 4900 feet in Falls Creek to about 6000 feet in a small stream on the Mount Wright trail. This elevation range will likely increase with additional sightings from the area. In the Cascade Mountains of Washington and Oregon, the Tailed Frog appears to be very sensitive to siltation and frequently disappears in and downstream from clearcuts and water diversions (Bury, pers. comm.). Preliminary findings do not indicate that this is the case in Montana. Eggs are laid during the late summer and take approximately 4 weeks to hatch. Tadpoles take 1-4 years to metamorphose, depending on water temperature (Nussbaum *et al.* 1983; Metter 1967). Sexual maturity in Montana is attained at ages 6-7, (Daugherty and Sheldon 1982) which is the latest age for sexual maturity of any North American amphibian.

Surveying: Tadpoles are frequently found while electro-shocking fish. They may also be found by turning over rocks in rapid water with a net held just downstream. Adults are best found by walking up streams starting 30-60 minutes after dark.

Status: The Tailed Frogs in this report are the northeastern-most records for the species. Tailed Frogs are known from a few other locations east of the Continental Divide in the Beaverhead National Forest. While Tailed Frogs should be considered a species with a very localized distribution on the RMRD of the L&CNF, it may be more common and widespread in suitable habitat than is currently known. It is common and widespread in western Montana. Currently it is a USFWS Candidate species (C-2).

Montana Natural Heritage Program rank: G5 S3S4.

Occurrences of Bufo boreas on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Western Toad (*Bufo boreas*)

Description: Adults are colored with a gray, brown, or olive-green mottling and a prominent white or yellowish line down the center of the back; very young transformed toads typically lack the dorsal line, and the warts are often red-brown in color. The pupils are horizontal. The adult has a body length of 2.5-5". There are no cranial crests and the skin is relatively dry with many warts and glands present.

Eggs and Larvae: Eggs are laid in long, clear, double strings, and each has a black embryo. Tadpoles are typically jet black, while all the Montana frog species tadpoles are green or bronze (except for some Tailed Frogs).

Similar species: Other Montana toads have cranial crests between their eyes. The Plains Spadefoot has one tubercle on the sole of the hind feet, a vertical pupil, and smoother skin. NOTE: It is very difficult to distinguish among the four Montana toad species in recently-transformed toadlets.

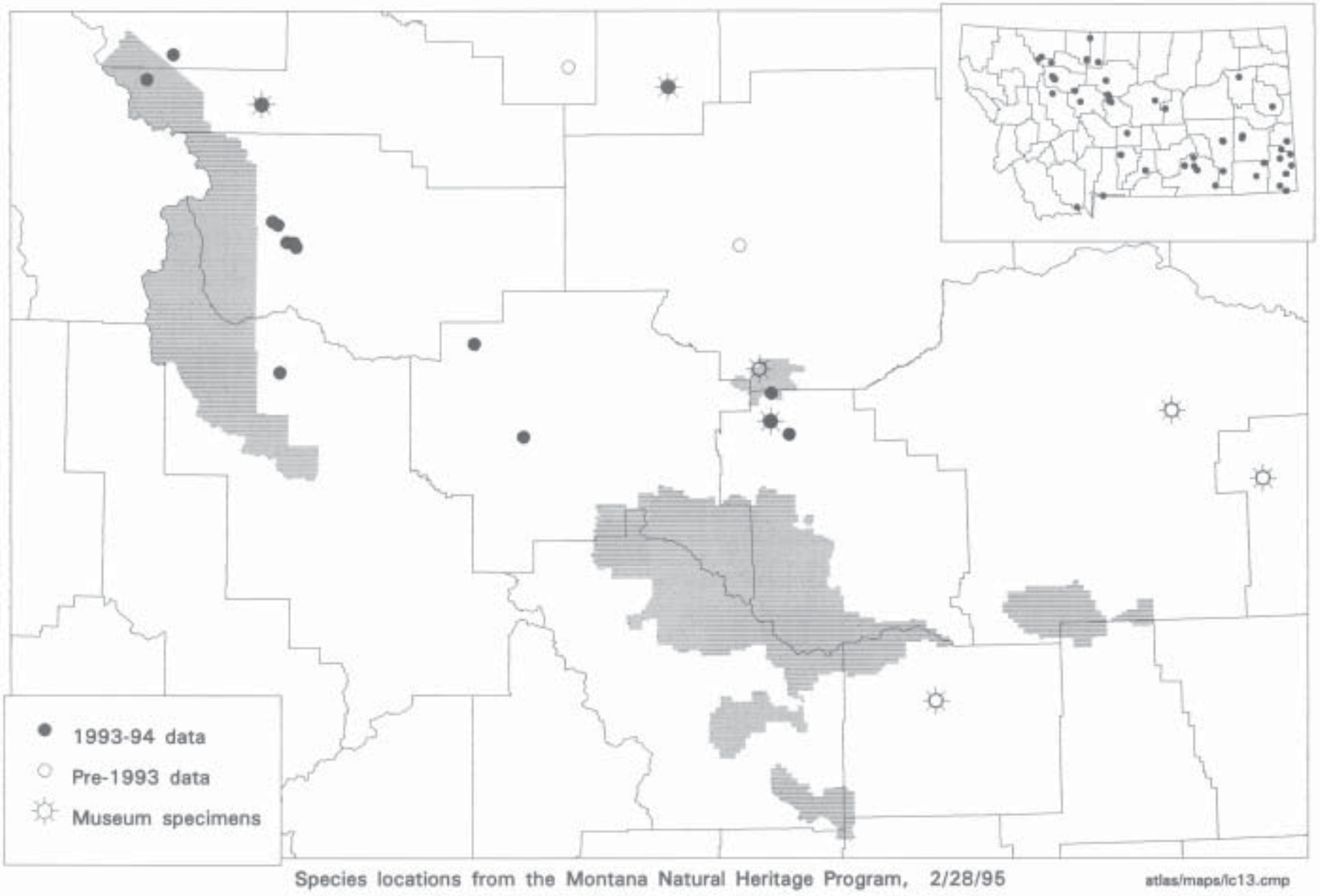
Habitat and Habits: Adults are largely terrestrial and found in a variety of habitats from valley bottoms to high elevations; they breed in lakes, ponds, and slow streams with a preference for shallow areas with mud bottoms. Breeding and egg laying in Montana usually takes place 1-3 months after snow-melt, from April at lower elevations to July at higher sites. Western Toads were reported from only two locations on the L&CNF in 1994. We found eggs in a beaver pond on a backwater of the Teton River on 26 May 1994; one clutch was about half developed the other two recently laid. Mike Enk reported a single adult along East Fork Woods Creek. Small tadpoles were seen on 21 June 93 at Pine Butte Swamp Preserve. Tadpoles are typically 2-3 months old at metamorphosis in Montana, depending on water temperature (Black 1970). Following metamorphosis, hundreds of small toads, many with the tails still present, can be found on the shores of breeding ponds.

Surveying: Tadpoles are easily seen in ponds during the day and can be sampled with a dipnet. During the breeding season, adults may be seen in the water but at other times are found in more terrestrial habitats.

Status: Tadpoles and eggs of the Western Toad were observed at only one site during the 1994 survey in the L&CNF; adults were seen at only a single additional site. None were seen in the Highwood, Little Belt, or Crazy Mountains, although historic records exist from all three ranges (Appendix 3,4). The rarity of this species on the RMRD and lack of recent sightings in the Jefferson Division is of concern. The U.S. Fish and Wildlife Service now lists this species as a Candidate (C-2) species in Colorado, Wyoming, and New Mexico. Apparent declines have recently been reported in northern Idaho (C. Peterson pers. comm.), northwest Montana (Werner and Reichel 1994), Yellowstone National Park (Peterson *et al.* 1992), Wyoming, and Colorado (Carey 1993). We would recommend that all sightings of this species be reported and that a monitoring program be set up.

Montana Natural Heritage Program rank: G4 S4.

Occurrences of Pseudacris triseriata on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Western Chorus Frog (*Pseudacris triseriata*)

Description: Adults are very small (0.75-1.5") and have tiny, almost unnoticeable toe pads. They have a dark line extending from the snout through the eye to the groin. Basic coloration is quite variable with the background color being green, brown, gray, or reddish. Typically 3-5 dark longitudinal stripes are present on the head and back which may be broken up into spots on some individuals. *Eggs and Tadpoles:* Eggs are laid in small clusters of 10-100, usually less than 1" across and attached to submerged vegetation (Wheeler and Wheeler 1966, Baxter and Stone 1985). Individual eggs are about 1 mm in diameter. Tadpoles are brown/bronze and the eyes are located on the sides of the head.

Similar species: Pacific Chorus Frogs (*Pseudacris regilla*) have obvious toe pads and an eye stripe ending at the shoulder. Recently metamorphosed Ranid frogs could be confused with this species but the coloration differs and the tiny toe pads are lacking.

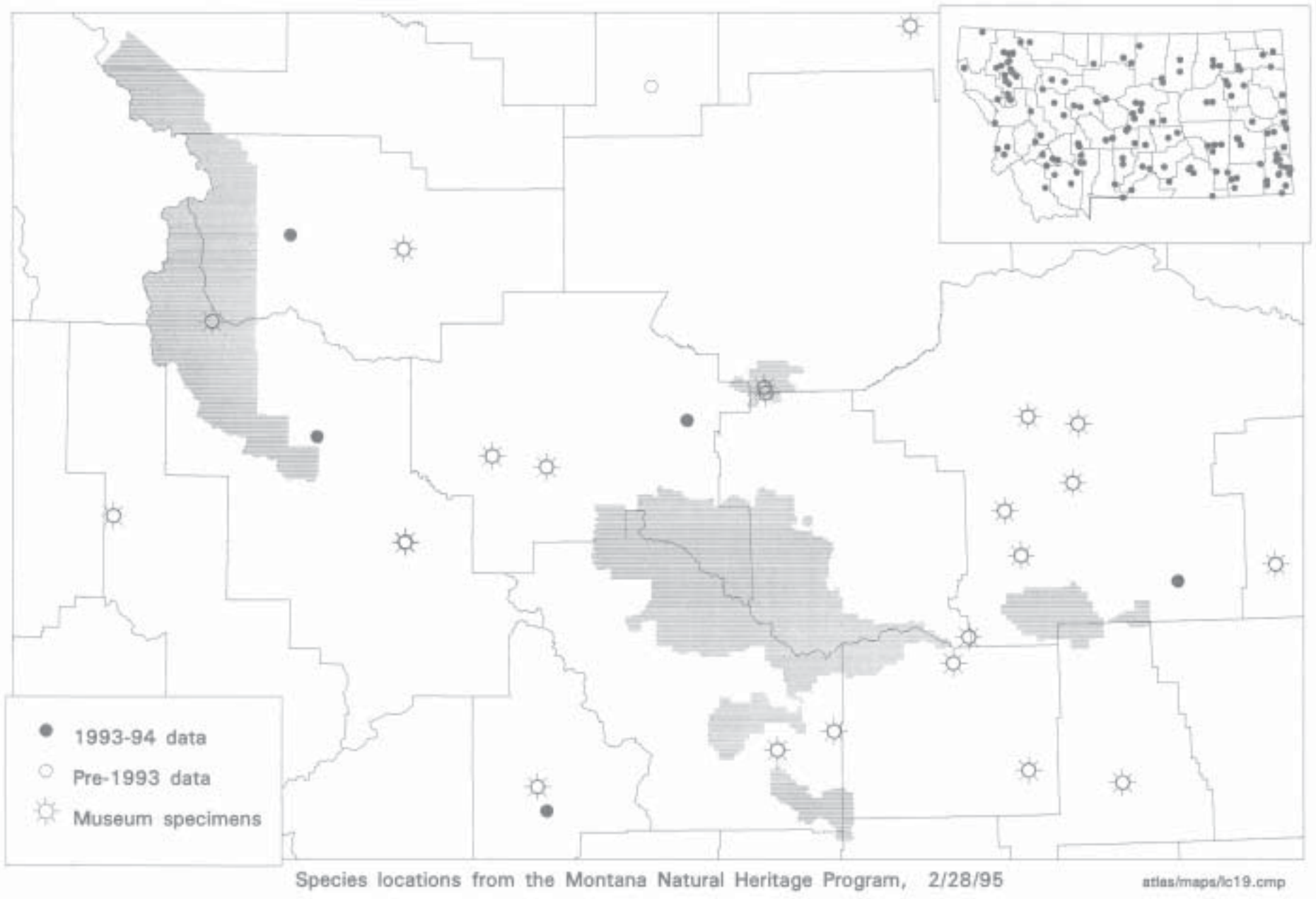
Habitat and Habits: Western Chorus Frogs are regularly found in the water only during the breeding period in spring. Their presence is obvious during this time due to their call which is given frequently at night and sporadically throughout the day. Calls were heard on or near the L&CNF from mid-May through early June while doing surveys; however, the precise beginning and end of calling in the area is unknown. Following breeding, these frogs move into adjacent uplands and are rarely seen. In eastern Montana they breed in temporary ponds and small lakes surrounded by prairie; in some locations in Montana they are also found in open forested habitats. Eggs hatch in about 2 weeks and tadpoles are about 2 months old at metamorphosis (Wheeler and Wheeler 1966, Nussbaum *et al.* 1983).

Surveying: Adults are easily surveyed for, using their calls for identification during the breeding season in the spring and early summer. During the breeding season, adults may also be seen in the water, but their small size and habit of freezing or diving when disturbed makes observation difficult; night surveys may be more productive. Egg masses are difficult to find. Tadpoles may be seen in ponds during the day and can be sampled with a dipnet.

Status: Common throughout the prairies of eastern Montana. Probably common at the lower edges of the L&CNF, especially where open forest or prairie occurs; perhaps uncommon and local within forested habitat at higher elevations. Mike Enk reported two locations with Western Chorus Frogs on the L&CNF. These included the headwaters of Arrow Creek in the Highwood Mountains and a seep area near Whiterock Creek in the RMRD; an additional historic record exists from lower Highwood Creek (Appendix 4). Numerous others were heard calling just outside the forest boundary.

Montana Natural Heritage Program rank: G5 S5.

Occurrences of Rana pipiens on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Northern Leopard Frog (*Rana pipiens*)

Description: Adults are brown or green with large, dark spots surrounded by light-colored halos on the sides and back. The dorso-lateral folds (ridges along the sides of the back) are usually lighter in color that the surrounding background. The under-side is typically white, but may be cream-colored or yellowish. The adult has a body length of 2-5". Newly transformed froglets may lack spots and are about 1" in length (Leonard *et al.* 1993).

Eggs and Tadpoles: Eggs are laid in 2-5" globular masses composed of hundreds to thousands of eggs (Hammerson 1982a, Nussbaum *et al.* 1983). The tadpoles are brown to dark brown on top with some metallic flecking, whereas the underside is often nearly transparent (Nussbaum *et al.* 1983). Total length of tadpoles may reach more than 3"; the eyes are located on top of the head.

Similar species: None, although some newly-transformed froglets may lack spots, which makes them extremely difficult to distinguish from Spotted and Wood Frogs.

Habitat and Habits: Northern Leopard Frogs are found in or near water in non-forested habitats. Vegetation is typically dense, as in a cattail marsh or dense sedge-meadow. Breeding takes place in lakes, ponds (temporary and permanent), springs, and occasionally backwaters or beaver ponds in streams. In Colorado, eggs hatch in 4-15 days and tadpoles take 8-15 weeks to metamorphose, depending on water temperature (Hammerson 1982a).

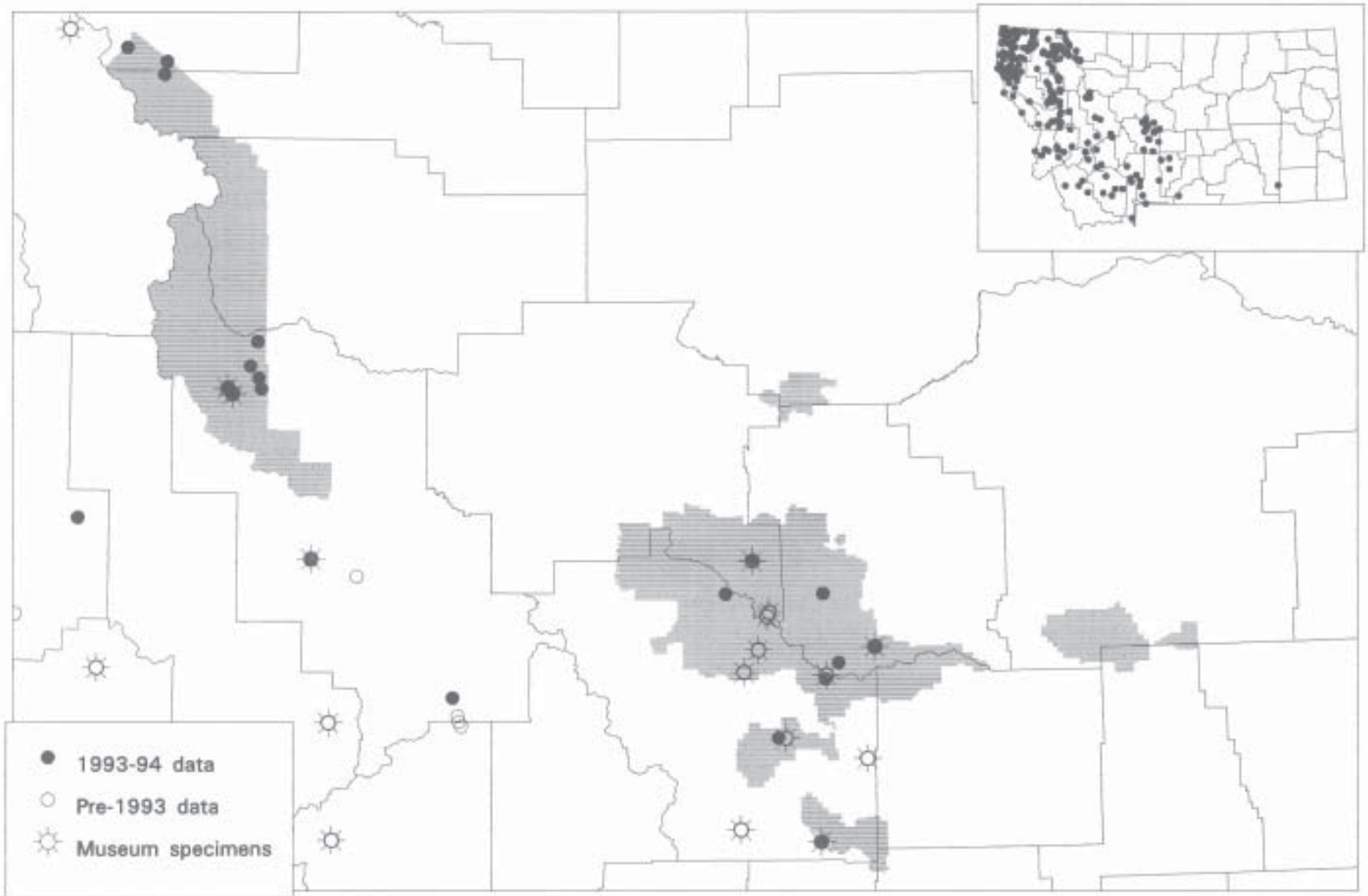
Surveying: Both adults, tadpoles, and eggs are easily seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand. At very low densities adults may be difficult to find and may be detected using a call recorder. Tadpoles are difficult to tell from those of the Spotted Frog in areas where the two species may overlap.

Status: Historically, the Northern Leopard Frog was widespread in Montana but it now appears to be extinct throughout much of the western part of the state. It is still common and widespread in the southeastern corner of the state, but its status is uncertain in central and northeastern Montana. It appears that only localized populations are present on the western edge of the plains. A single historic location is known from on the RMRD of the L&CNF; that museum specimen was collected in 1958 from the ìSun River, 5500 feet.î Although it is impossible to pinpoint the exact locality for this record, wetlands in the immediate area should be surveyed. Specimens were collected in upper Highwood Creek in the Highwood Mountains in 1962; although searches were conducted in that area during this study, no Northern Leopard Frogs were found. Several other historic records exist from near L&CNF lands just to the south and east of the Little Belt Mountains. More recent records include: 1) a single individual seen during a two-days period at Pine Butte Swamp in 1993; 2) adults seen along Belt Creek north of L&CNF lands in 1994; and 3) adults seen along the Dearborn River in 1993. Due to its significant decline and lack of current reports from the L&CNF, all sightings of this species should be documented.

Northern Leopard Frogs are now absent from many other areas in North America where they were common a few decades ago. Widespread extinctions are known from Alberta (Koonz 1993), Wyoming, Colorado (Hammerson 1982b, Corn and Fogelman 1984), Idaho (Groves and Peterson 1992), Washington, and Oregon (Leonard *et al.* 1994). Bullfrog and fish introductions, acid rain, ozone depletion, immune system suppression, and ìPostmetamorphic Death Syndromeî have all been suggested as causes for frog extirpations in other areas (Corn and Fogelman 1984, Hammerson 1982b, Carey 1993, Leonard *et al.* 1993).

Montana Natural Heritage Program rank: G4 S4.

Occurrences of Rana pretiosa on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Spotted Frog (*Rana pretiosa*)

Description: The adult has a snout-vent length of 2-4". Adults are dark to light brown, gray, or olive green with dark spots (frequently with lighter centers) found on the back, sides and legs. The number and pattern of spotting is quite variable. The back and sides are often covered with small bumps. The underside of the legs is bright red, salmon, or orange; this bright color may extend up to the chin or be replaced by a light, mottled gray on the chin, chest, and/or belly. In younger subadults, bright leg color is often lacking and instead a light, lemon-colored wash is present. In these subadults there is often a dark mask present, with a light jaw stripe extending to the shoulder; both the mask and jaw stripe may be less obvious in larger, older animals.

Eggs and Tadpoles: Eggs are laid in large, globular masses of 150-500 at the surface of the water. The tadpoles are dark green to brown on top with some gold flecking whereas the underside has an iridescent bronze or silver color. Total length of tadpoles may reach 3"; the eyes are located on top of the head.

Similar species: The bright-colored pigment on the undersides of the adultís legs distinguish this species from all other frogs in Montana. Younger individuals, without colored legs, may usually be distinguished from other frogs by a combination of: 1) dorsal spots usually present but not surrounded by light-colored halos; 2) dorsolateral folds present; 3) toes without pads at the tips; and 4) a pale gray, (rather than white) belly.

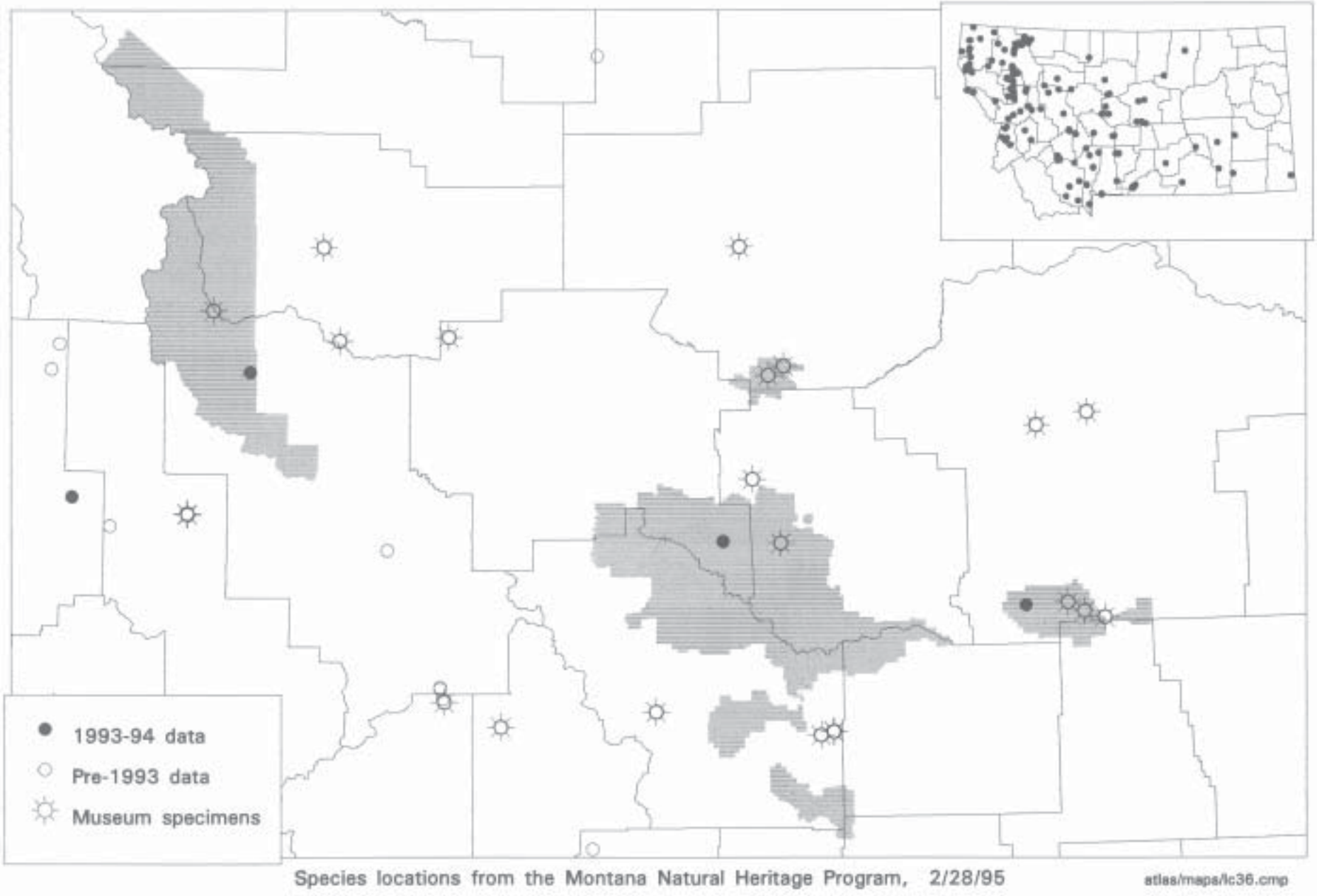
Habitat and Habits: Spotted Frogs are regularly found at the waterís edge in openings within forest habitats. Wetlands in or near treeline are also used, but populations are uncommon in the large, open intermountain valleys. The Spotted Frog was commonly found on both divisions of the L&CNF from just above the prairie edge at 4860 ft. to over 7400 ft elevations near timberline. Individuals were found in every type of wetland habitat, although numbers varied widely from one to 25 or more per site. Breeding takes place in lakes, ponds (temporary and permanent), springs, and occasionally backwaters or beaver ponds in streams. All the egg masses in a particular pond are often found in the same location at the margin of the pond; therefore, the eggs are susceptible to drying up if pond levels recede substantially before hatching. Both eggs and recently hatched-tadpoles were found 27 May 94 at a pond near Wood Creek. Tadpoles were seen from the earliest survey on 27 May 94 to the latest survey on 9 July 94; at that date they seemed a few weeks from metamorphosis. Eggs hatch in 2-3 weeks and tadpoles take 2-14 months to metamorphose, depending on water temperature (Nussbaum *et al.* 1983, Turner 1958). Young and adult frogs often disperse into marsh and forest habitats but are not usually found far from open water.

Surveying: Adults, tadpoles, and eggs are easily seen in and along the water during the day and can be sampled with a dipnet; adults may also be captured by hand. Many adults may leave the breeding ponds following egg laying and move to nearby feeding areas for the summer. Tadpoles are difficult to distinguish from those of the Northern Leopard Frog in areas where the two species overlap.

Status: The most common frog on the L&CNF and in western Montana. It was observed on the RMRD, and the Little Belt, Crazy, and Castle Mountains of the Jefferson Division, however few breeding location are known at this time and, if found, should be reported. It was not seen in the Highwood or Snowy Mountains; any sightings from those mountain ranges should be reported. The species is currently a U.S. Fish and Wildlife Service Category 2 Candidate species in Montana; elsewhere in its range it is listed as a C-1, with Threatened/Endangered status warranted but precluded by work on higher priority species (U.S. Fish and Wildlife Service 1993). Significant declines are known from the southern end of the range (Nevada, southern Idaho, Utah). While significant declines are also apparent in coastal Washington (McAllister *et al.* 1993), Oregon, and California, recent (as yet unpublished) research indicates that those populations are actually a different species.

Montana Natural Heritage Program rank: G4 S4.

Occurrences of Thamnophis elegans on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc36.cmp

Western Terrestrial Garter Snake (*Thamnophis elegans*)

Description: Adult Western Terrestrial (or Wandering) Garter Snakes are smaller in body size than the Common Garter Snake, their length varying from 18-43". Three yellow longitudinal stripes are present (one dorsal, two lateral), but the dorsal stripe is much narrower than that of the Common Garter Snake. A distinctive feature of the Western Terrestrial Garter Snake is a series of alternating black spots which run the length of the body between, and somewhat on, the yellow stripes. The background color between the stripes tends to be more gray compared to the dark brown found in the Common Garter Snake. The ventral surface has a series of dark black/brown blotches which may cover most of the surface. The dorsal scales are keeled and there are normally 8 upper labial scales.

Young: The coloration of young snakes is similar to that of the adults; young are live-born.

Similar species: See Common and Plains Garter Snakes.

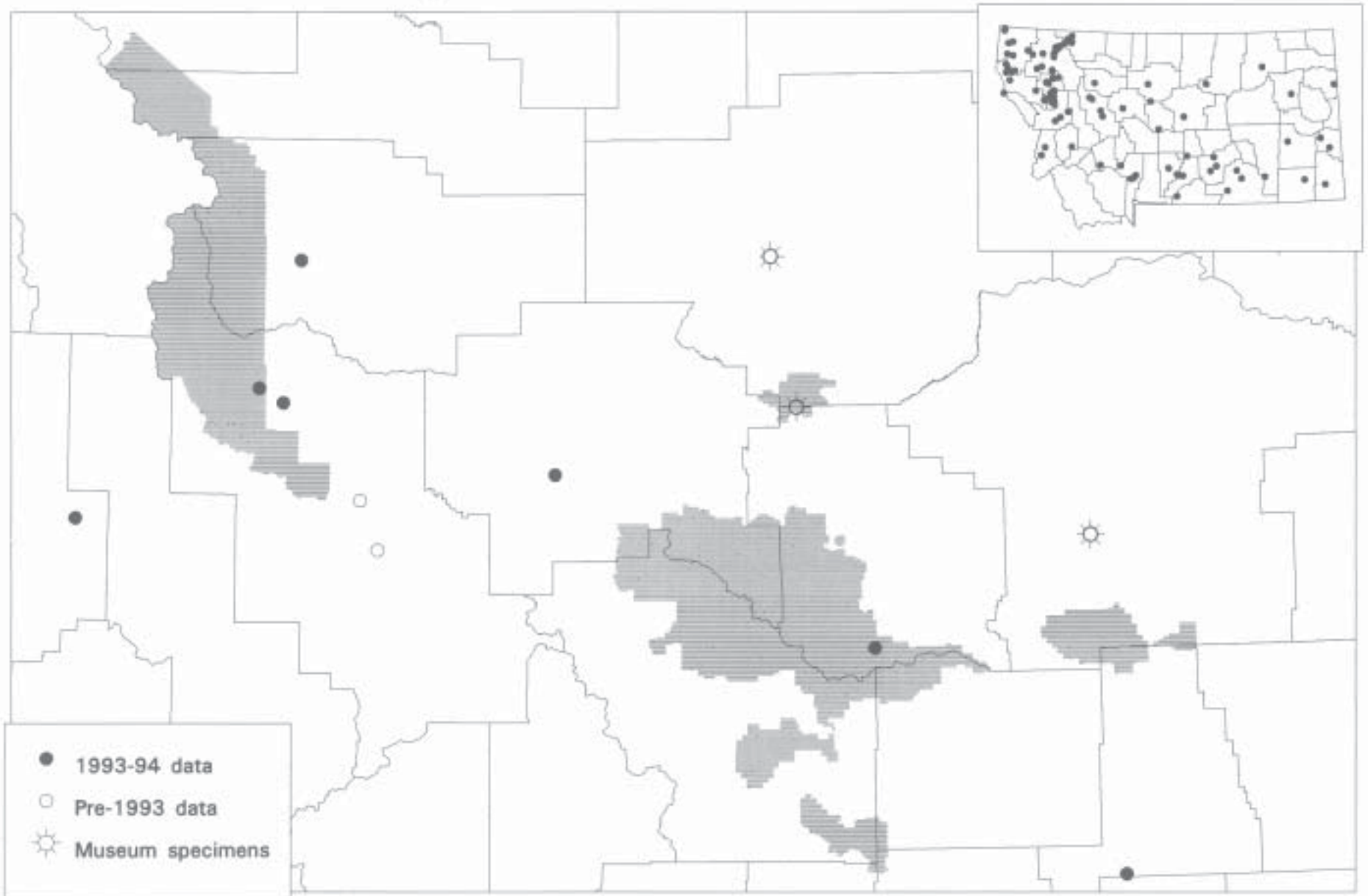
Habitat and Habits: The habitat and habits of the Western Terrestrial Garter Snake are similar to the Common Garter Snake, i.e., they are found in most habitats but are particularly common around wetlands. On the L&CNF the species was found between 5000 ft and 6000 ft but probably occurs much lower and higher. Females give birth to 4-19 young during the summer (Stebbins 1985).

Surveying: Timed sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings are the best survey times. Much distributional information may come from recording incidental sightings. More intensive research may be done using funnel traps in combination with drift fences. More intensive research and survey projects may use mark-recapture or radiotelemetry techniques.

Status: Western Terrestrial Garter Snakes were found in the RMRD, Little Belt Mountains, and Big Snowy Mountains of the L&CNF. There is also a historic record of them from the Highwood Mountains in additional to historic records from all ranges where they were found in 1994. Given the small number of records from throughout the area, all records should be documented until the distribution is better understood; of particular interest would be documentation of denning sites. Sightings of *elegans* from the Castle, Crazy, and Little Snowy Mountains should be documented to confirm their presence in those ranges.

Montana Natural Heritage Program Rank: G5 S5.

Occurrences of Thamnophis sirtalis on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc38.cmp

Common Garter Snake (*Thamnophis sirtalis*)

Description: The Common Garter Snake consists of two color phases in western Montana, both ranging from 18-52" in length. Both phases have three yellow longitudinal stripes: one located dorsally and one on each side. Between the yellow stripes is a black stripe broken with red spots in one color phase but lacking red in the other. Ventral coloration varies from yellow to bluish, and some individuals of the red-sided color phase have small black spots on the edge of the ventral scales. The dorsal scales are keeled, and normally there are 7 upper labial scales.

Young: The coloration of young snakes is similar to that of the adults; young are live-born.

Similar species: The Western Terrestrial Garter Snake has black spots overlapping the dorsal yellow stripe; the background color between stripes tends to be brownish. The Plains Garter Snake has the side yellow stripe on the 3rd and 4th scale rows above the belly scales and the dorsal stripe is often orange or red.

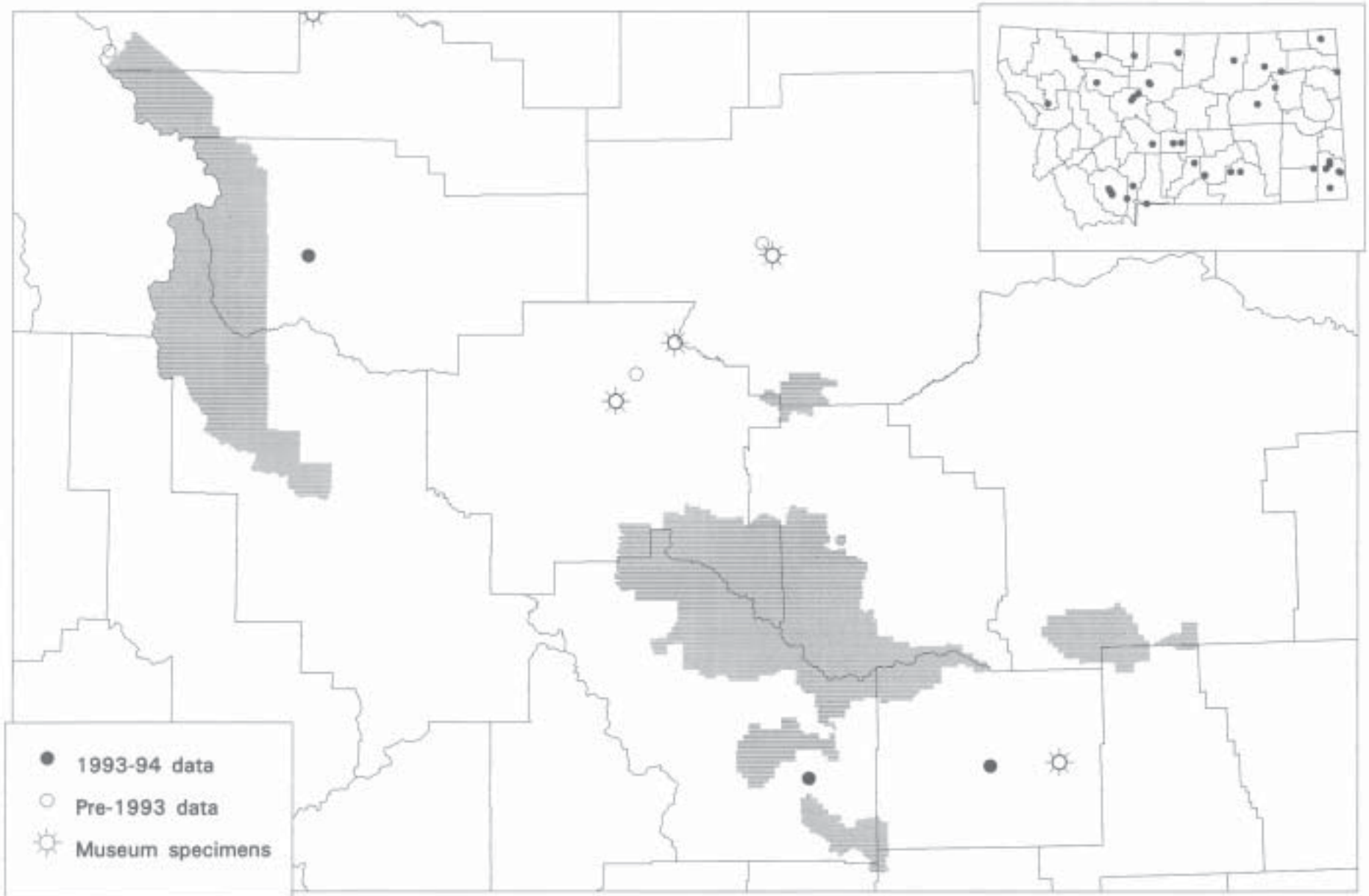
Habitat and Habits: Garter snakes are found in all forest habitats but are more common at lower elevations around marsh-bog-pond situations, where they prey on young fish, frogs, toads, mice and invertebrates. They are sometimes confused with water snakes because of their frequent aquatic exploits, but there are no true water snakes in Montana. Typical of most garter snakes, they emit a noxious secretion when handled and can be aggressive when disturbed. The Common Garter was found between 4100 ft to 5540 ft on or near the L&CNF, but they are likely to occur at lower and much higher elevations. Garter snakes eat a variety of vertebrates and invertebrates, with the Common Garter Snake concentrating more on amphibians than the Western Terrestrial Garter Snake. The Common Garter Snake is a live-bearer giving birth to 12-18 young during the summer in Colorado (Hammerson 1982a).

Surveying: Timed-sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings are the best survey times. Much distributional information may come from recording incidental sightings. More intensive research may be done using funnel traps in combination with drift fences. More intensive research and survey projects may use mark-recapture or radiotelemetry techniques.

Status: Common Garter Snakes were found in the RMRD and Little Belt Mountains of the L&CNF. There is also a historic record of them from the Highwood Mountains. Given the small number of records from throughout the area, all records should be documented until the distribution is better understood; of particular interest would be documentation of denning sites. Sightings of *sirtalis* from the Castle, Crazy, and Snowy Mountains should be documented to confirm their presence in those ranges. Only the red-sided color phase was observed in the present survey, however the color phase lacking red spots should be watched for. The relative abundance of this species in this area compared to the Western Terrestrial Garter Snake is not yet clear; in northwestern Montana the Common Garter Snake is currently much less abundant.

Montana Natural Heritage Program Rank: G5 S5.

Occurrences of Ambystoma tigrinum on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc2.cmp

Species Potentially Present on the Lewis and Clark National Forest

Tiger Salamander (*Ambystoma tigrinum*)

Description: Adults have a smooth moist skin without scales and the color pattern is highly variable; usually the background color is dark, with lighter blotches of yellow, tan or green. The adult is large and heavy-bodied with a snout-vent length of 3-6".

Eggs and Larvae: Egg masses are typically laid in small clusters of 5-120, but may be laid singly (Nussbaum *et al.* 1983, Leonard *et al.* 1993). They are usually attached to vegetation and placed 2"-10" below the surface of the water (Hammerson 1982a). Larval Tiger Salamanders are typically pale green or brown-colored, though some are nearly white in bentonite clay ponds. They are found in lakes and ponds, have external gills, and are relatively large (0.75-4" snout-vent) and heavy-bodied.

Similar species: Adult Tiger Salamanders have two prominent tubercles on the bottom of each hind foot which Idaho Giant Salamanders lack. Idaho Giant Salamanders also have a more marbled color pattern and a very large head.

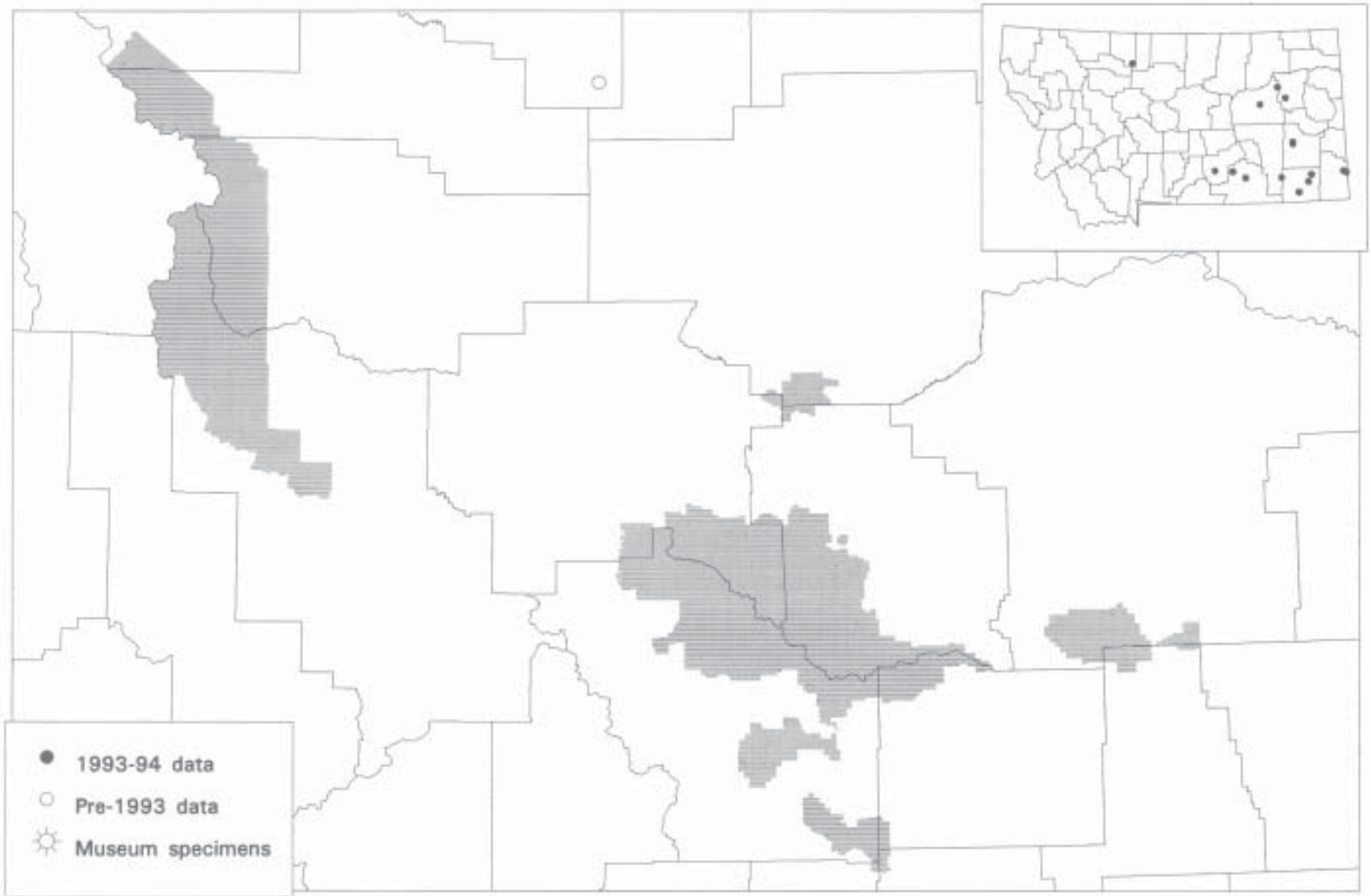
Habitat and Habits: Tiger Salamanders in Montana are primarily associated with prairie or agricultural habitats in eastern Montana. They breed in ponds or lakes, usually those without fish present. In arid areas they may also be found in springs, intermittent streams, and stock ponds. In Blue Lake, Madison County, Montana, eggs are laid from early June to mid-August, hatched in about 2 weeks, and metamorphosed after more than a year (Micken 1968, 1971). In Colorado and Wyoming egg laying takes place from mid-March to mid-August (Hammerson 1982a, Baxter and Stone 1985). Eggs hatch in 2-5 weeks in Colorado and metamorphosis occurs after 2-24 months (Hammerson 1982a). Following breeding, adults may remain in the pond or may move to upland areas and live in burrows of their own or in those of other animals. In some locations, such as Blue Lake in Madison County, larval salamanders never transform, but rather become sexually mature and breed while still retaining external gills. This process is referred to as neoteny and these salamanders are called ìaxolotlsî or ìwater dogs.î

Surveying: Larvae and eggs may be seen in ponds during the day and may be sampled with a dipnet. In areas where larvae transform, migrations of hundreds or thousands of newly transformed adults are occasionally seen in mid to late summer or in early fall. During the breeding season, adults are often seen in the water or moving to or away from it. Pitfall and minnow traps may be used at this time to capture adults. The rest of the summer adults are difficult to find; the best techniques may be pitfall traps or driving roads on warm rainy nights.

Status: The most common salamander in eastern Montana. They have not yet been found on the L&CNF, but there are records of larvae from ponds just south of the Castle Mountains (north of Lennep) and from Pine Butte Swamp Preserve, just east of the RMRD. They should be surveyed for in low elevation ponds and lakes, particularly those without fish and within grassland habitats. Any located on the L&CNF should be documented.

Montana Natural Heritage Program rank: G5 S5.

Occurrences of Bufo cognatus on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc9.cmp

Great Plains Toad (*Bufo cognatus*)

Description: Adults have dry skin with small warts. The coloration is dominated by a number of large, dark, somewhat symmetrical spots surrounded by light edges on the back. The dorsal background color is gray, light brown or olive green. The Great Plains Toad has converging V-shaped cranial crests between the eyes and post-orbital crests connecting to them at a right angle behind the eyes; the post-orbital crests typically touch the parotoid glands. The pupils are horizontal. The adult has two black tubercles on the hind feet and a body length of 2-3.5".

Eggs and Tadpoles: Similar to the Western Toad.

Similar species: Other Montana toads lack the somewhat symmetrical spotted pattern on the back. NOTE: It is very difficult to distinguish among the four Montana toad species in recently transformed toadlets.

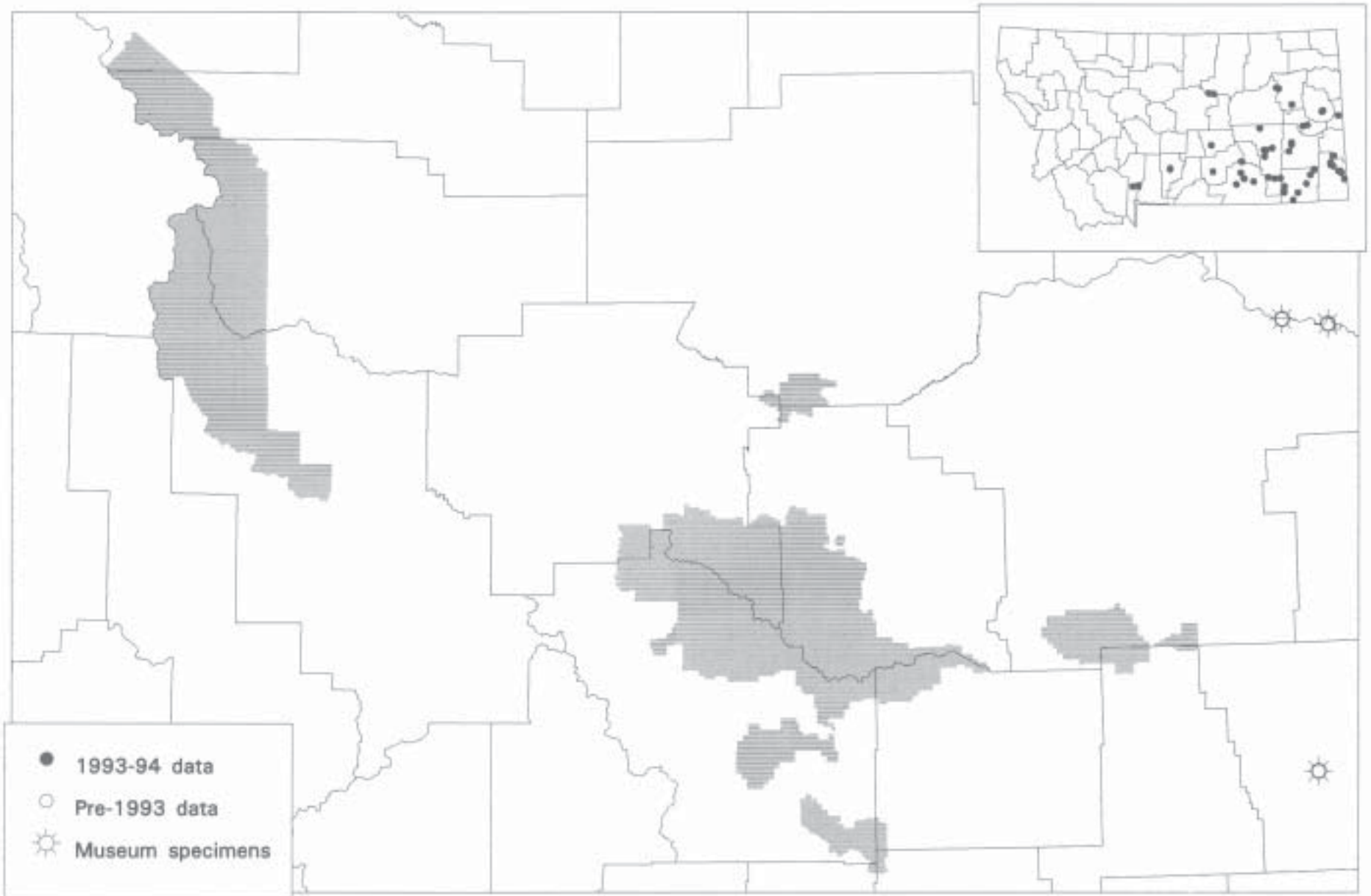
Habitat and Habits: Adults may favor higher elevation grasslands than Woodhouseís Toad which favors floodplains (Bragg 1940, Timkin and Dunlap 1965, Black 1970). They have also been found in agricultural areas and open Ponderosa pine savannahs in southeastern Montana (Black 1970). They are most active at night, spend much of the year underground, and emerge in response to warm rains (Hammerson 1982a). They normally breed in temporary ponds resulting from heavy rains or irrigation runoff or reservoirs with much fluctuation (Bragg 1940, Hammerson 1982a). In Montana they apparently breed from May to July (Black 1970). Females lay strings of eggs which hatch after 2-3 days (Hammerson 1982a). Young typically metamorphose after about 1.5 months, although metamorphosis has been reported in as little as 17 days (Hahn 1968, Hammerson 1982a).

Surveying: Adults may be found by listening for their loud calls on warm (>60° F) nights following heavy rains (Hammerson 1982a). ìRoad huntingî on warm nights may also be effective. Eggs and tadpoles are seen in ponds during the day and can be sampled with a dipnet; however, identification of toad eggs and tadpoles is difficult or impossible in the field.

Status: Not yet found on the L&CNF, but known from the prairie region about 70 miles north of the Highwood Mountains. Occurs in localized areas in eastern Montana, with large gaps in its known range. Geographic and habitat relationships with other toads in Montana are not well known. The Great Plains Toad should be watched for at low elevations in prairie or shrub-steppe habitat on the L&CNF, especially on the Jefferson Division. Any located on the L&CNF should be well documented with a description indicating how the species was differentiated.

Montana Natural Heritage Program rank: G5 S4.

Occurrences of Bufo woodhousii on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc11.cmp

Woodhouseís Toad (*Bufo woodhousii*)

Description: Adults have dry skin with small warts, and are gray, brown, or olive-green with paler mottling or spots. A prominent white or yellowish line runs down the center of the back; very young transformed toads typically lack the dorsal line, and the warts are often red-brown in color. Woodhouseís Toad has parallel cranial crests between the eyes and post-orbital crests connecting to them at a right angle behind the eyes; the post-orbital crests typically touch the parotoid glands. If a lump-like boss is present on the snout, it does not extend back between the eyes. The pupils are horizontal. The adult has two black tubercles on the hind feet and a body length of 2.5-4". *Eggs and Tadpoles:* Similar to those of the Western Toad.

Similar species: Western Toad lacks cranial crests. Great Plains Toad has large, white-bordered, dark, dorsal blotches. The Canadian Toad has a lump between the eyes; frequently the parotoid gland is separated from the post-orbital crest which may be broken or absent. NOTE: It is very difficult to distinguish among the four Montana toad species in recently transformed toadlets.

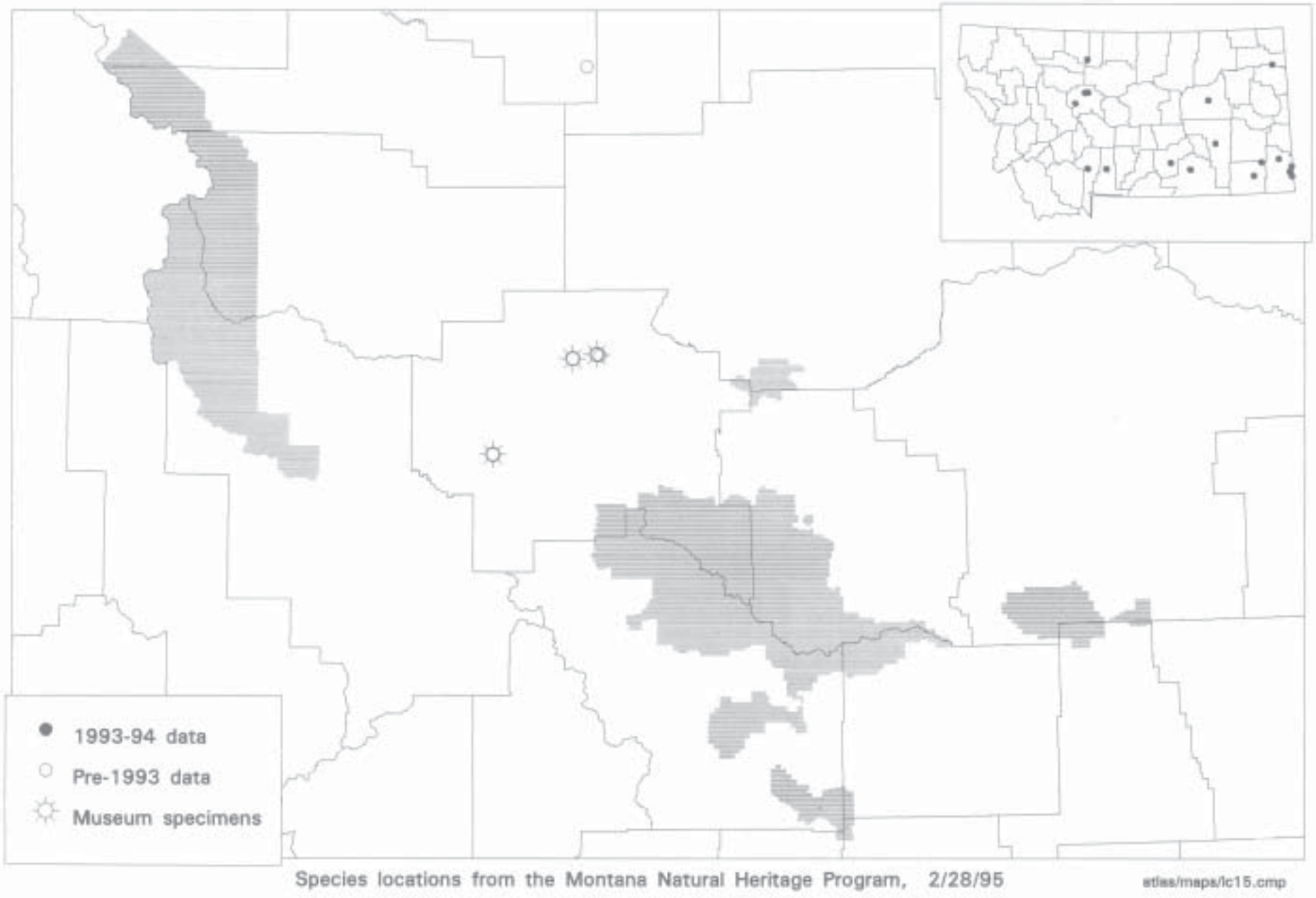
Habitat and Habits: Adults are partially terrestrial but often found near water. They are usually found in irrigated agricultural areas and flood plains, rather than the more upland areas used by Great Plains Toads (Bragg 1940, Timkin and Dunlap 1965, Black 1970). They are most active at night, although they may at times ben found feeding during the day (Hammerson 1982a). They typically breed in permanent lakes, ponds, reservoirs, and slow streams, with a preference for shallow areas with mud bottoms (Black 1970, Hammerson 1982a, Baxter and Stone 1985). Breeding and egg laying is spread out over the spring and early summer, with known dates from Montana ranging from 4 May to 1 July (Black 1970).

Surveying: Adults may easily be found by using their loud calls for identification on warm (>54° F) nights; calling peaks during the first few hours after sunset (Hammerson 1982a). ìRoad huntingî on warm nights may also be effective. Eggs and tadpoles are seen in ponds during the day and can be sampled with a dipnet; however, identification of toad eggs and tadpoles is difficult or impossible in the field.

Status: Not known from the L&CNF; the nearest known record, collected in 1918, is from about 30 miles southeast of the Little Snowy Mountains, 1 mile west of Kline. Woodhouseís Toad is relatively common in southeastern Montana, however, its status elsewhere in the state is unclear. Geographic and habitat relationships with other toads in Montana are not well known. It should be watched for at low elevations in prairie or shrub-steppe habitat on the L&CNF, especially in the Jefferson Division; it could occur along the Smith River. Any located on the L&CNF should be well documented with a description indicating how the species was differentiated.

Montana Natural Heritage Program rank: G5 S4.

Occurrences of Scaphiopus bombifrons on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc15.cmp

Plains Spadefoot (*Scaphiopus [=Spea] bombifrons*)

Description: Adults are colored gray or brown with darker mottling on the back and a white belly. Some individuals have indistinct longitudinal streaking. The pupils of the Plains Spadefoot are vertically elliptical and there is a high, hard lump between the eyes. Its skin is less warty than true toads. The adult has a single tubercle on the hind feet and has a body length of less than 2.5". *Eggs and Tadpoles*: Oval egg masses of 10-250 eggs are attached to underwater plants or debris. Tadpoles are mottled sooty and olive-yellow above and paler below with gold metallic flecking over all; iris is gold.

Similar species: Other Montana frogs and toads have round or horizontally elliptical pupils.

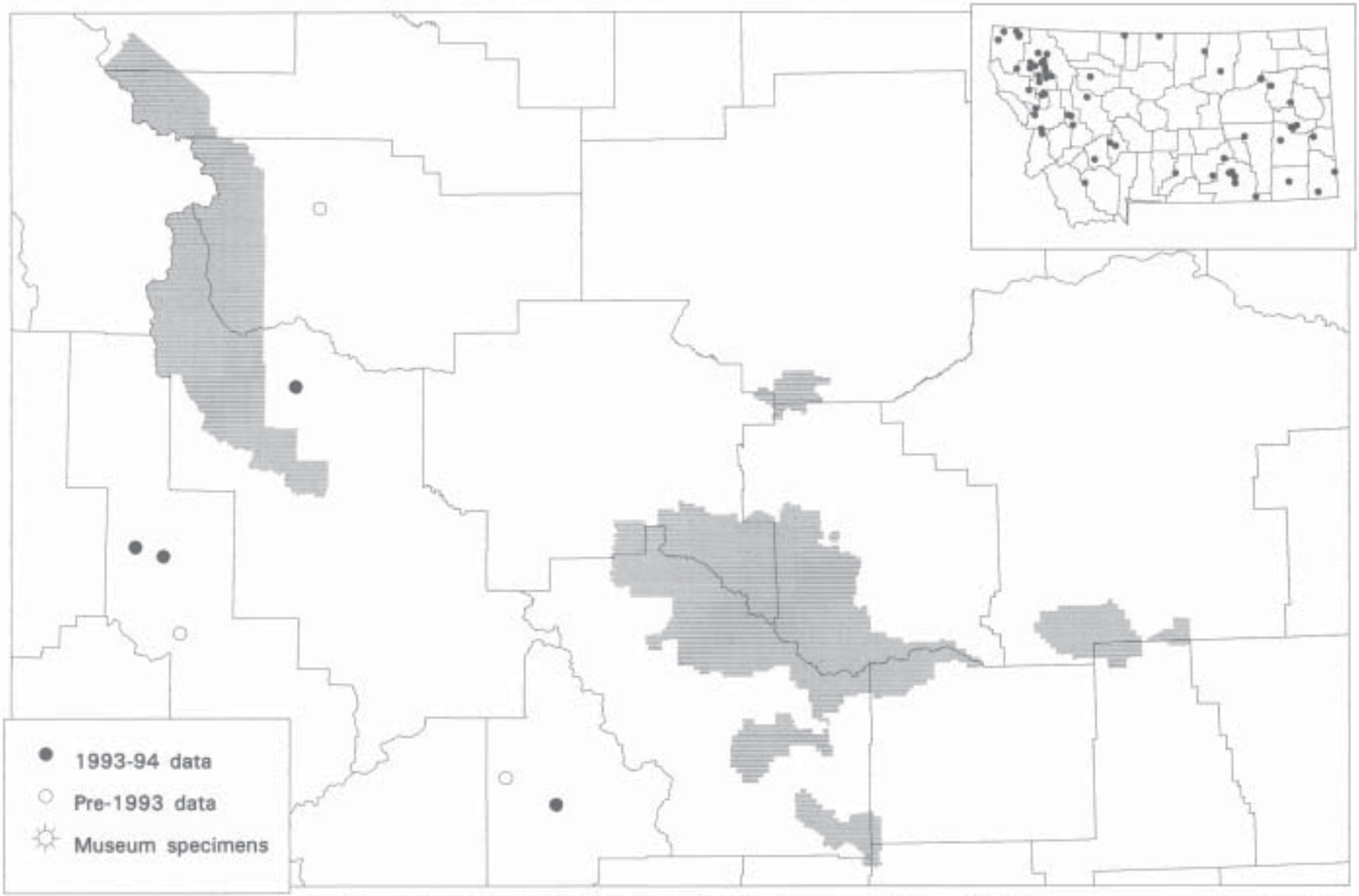
Habitat and Habits: Adults are found in grassland and sagebrush areas, particularly in areas with sandy or loose soil (Wheeler and Wheeler 1966, Hammerson 1982a, Baxter and Stone 1985). Except during breeding, they are seldom found in the water. They are primarily nocturnal and emerge from their burrows only following heavy rains. They breed in shallow temporary pools usually following heavy spring or summer rains (Hammerson 1982a). Males call loudly, with groups being heard for up to a mile. Eggs hatch after 2-3 days and tadpoles transform in 6-10 weeks (Wheeler and Wheeler 1966, Hammerson 1982a).

Surveying: Adults may be easily found by using their calls for identification when breeding at night or by ìroad huntingî on warm, rainy nights. Calling normally takes place only when the temperature is >50° F (Hammerson 1982). Tadpoles are seen in ponds during the day and can be sampled with a dipnet. Surveying is complicated by the long time periods which this species spends underground, especially during droughts.

Status: The Plains Spadefoot is not known from L&CNF lands; the nearest records are from Cascade County about 20-30 miles west of the Highwood Mountains, WNW of the Little Belt Mountains, and in Great Falls. Locally common in eastern Montana; there are large gaps in the known range. It should be watched for at low elevations in prairie or shrub-steppe habitat on the L&CNF, especially the Jefferson Division. Any located on the L&CNF should be well-documented.

Montana Natural Heritage Program rank: G5 S4?

Occurrences of Chrysemys picta on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

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Painted Turtle (*Chrysemys picta*)

Description: Adult Painted Turtles have a relatively flat dorsal shell, or carapace, the length of which may reach 9" in females and 7" in males. The background color of the shell may be dark brown, olive, or black. A series of short, irregular yellow lines are often scattered across the shell, and a red and black border forms the outer edge. The ventral shell, or plastron, is red with a centrally-located yellow and black blotch with edges flaring out along the border of the scutes. The edge of the plastron also has a series of black and yellow blotches. The head, neck, and legs are marked with yellow lines and a red spot appears behind the eye. Very dark colored individuals are occasionally found. Males are distinguished by longer front claws and longer tails with the anus posterior to the margin of the carapace (Ernst *et al.* 1994).

Eggs and Young: The elliptical, white, soft-shelled eggs are about 28-35 mm in length and 16-23 mm in width (Ernst *et al.* 1994). They typically number 6-23 per clutch. Coloration of young Painted Turtles is more vibrant and the shell is not quite as flattened as adults.

Similar Species: None.

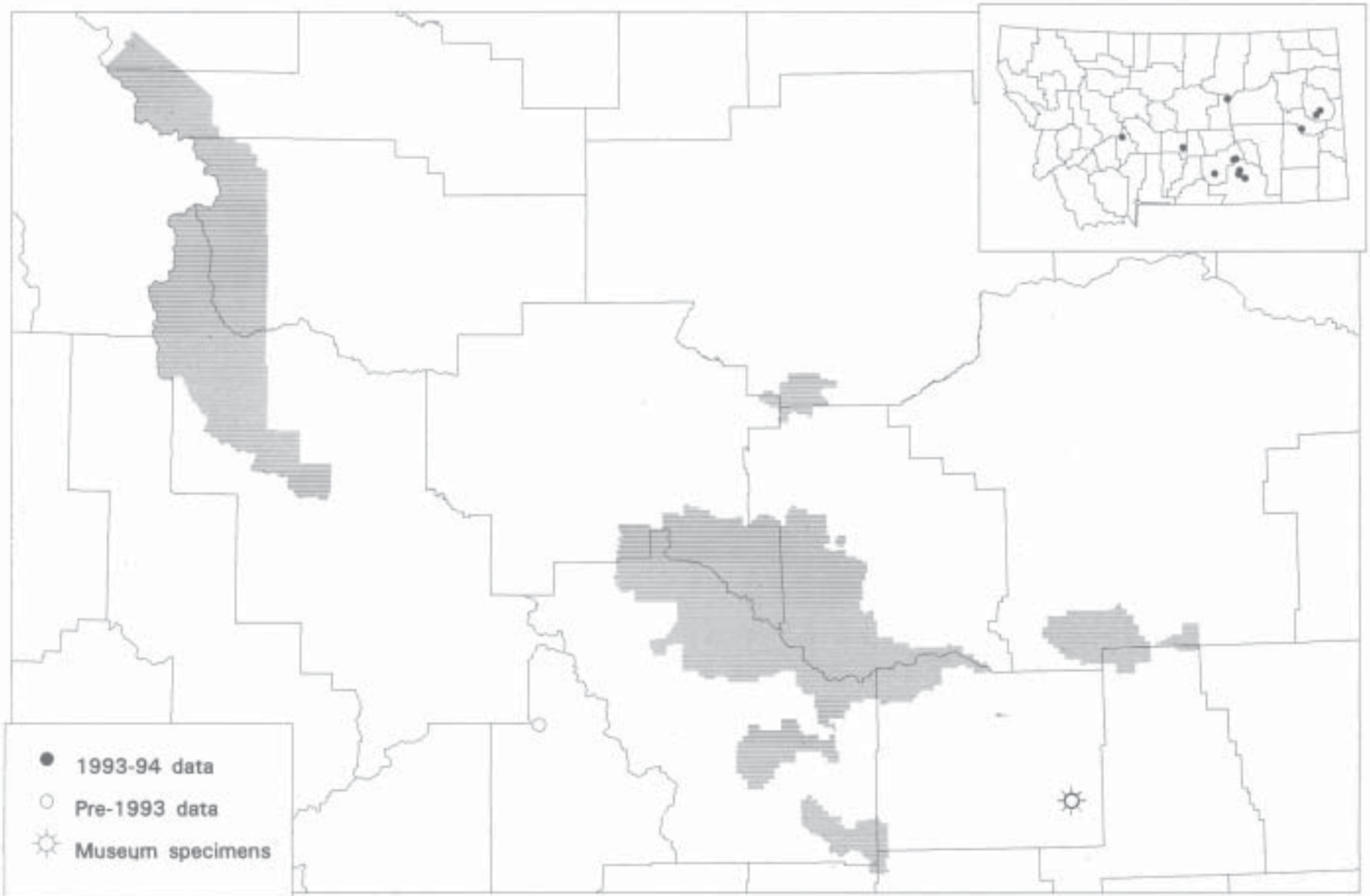
Habitat and Habits: Painted Turtles are active during the day and are rarely seen far from ponds, lakes, or the slow-moving water of streams. Adults are primarily herbivorous, feeding on a variety of aquatic plants, but will also scavenge on animal remains. Eggs are usually laid within 10-20 feet of the waterís edge, although some individuals will travel up to 600 m seeking a suitable site. During egg-laying, the female excavates a hole with her hind feet and deposits the eggs, which are then covered by several inches of dirt. Predation on turtle eggs by raccoons, skunks, etc. is common, and shell fragments are evidence of such activity. Female Painted Turtles may lay more than one clutch of eggs each summer. Young borne of late egg depositions overwinter in the nest and do not emerge until the following spring (Ernst *et al.* 1994). Once females lay their eggs, they return to the pond, where they can often be seen basking on logs or rocks along with juveniles and males. Painted Turtles are sexually mature at 3-5 years of age and may live to be 30 years or older (Ernst *et al.* 1994).

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable for presence/absence studies since the three turtle species in Montana are easily distinguished. Basking peaks at different times during the day, depending on season and location; in the northern states and Canada it generally peaks in the morning. Surveys should be done on sunny days with a pair of binoculars. During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on a walk-through survey.

Status: Painted Turtles are locally quite common in Montana at lower elevations. They were not found on the L&CNF, but were seen only a few miles east of the RMRD. There has been some concern about Painted Turtle populations nationally, and whether declines have occurred in Montana is unknown. It should be watched for particularly at lower elevations in ponds in open forest, prairie or shrub-steppe habitat on the L&CNF. Any animals located should be documented.

Montana Natural Heritage Program Rank: G5 S5.

Occurrences of Trionyx spiniferus on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/mapa/lc25.cmp

Spiny Softshell (*Trionyx spiniferus*) (=*Apalone spinifera*)

Description: Spiny Soft-shells have flexible, leathery shells. The carapace is olive-gray, marked with dark spots. The plastron is white or light cream-colored. Female carapace length is up to 18 inches or more, whereas males are typically 6-8 inches. The nostrils are terminal, allowing this turtle to remain entirely beneath the surface and take air through its ìsnorkel.î

Eggs and Young: The nest is a flask-shaped excavation containing 4-39 (typically 12-18) hard-shelled, spherical, white eggs. The individual eggs range in size from 24-32 mm in diameter and average about 28 mm. Hatchlings resemble adults and are 30-40 mm in shell length (Ernst *et al.* 1994).

Similar Species: None.

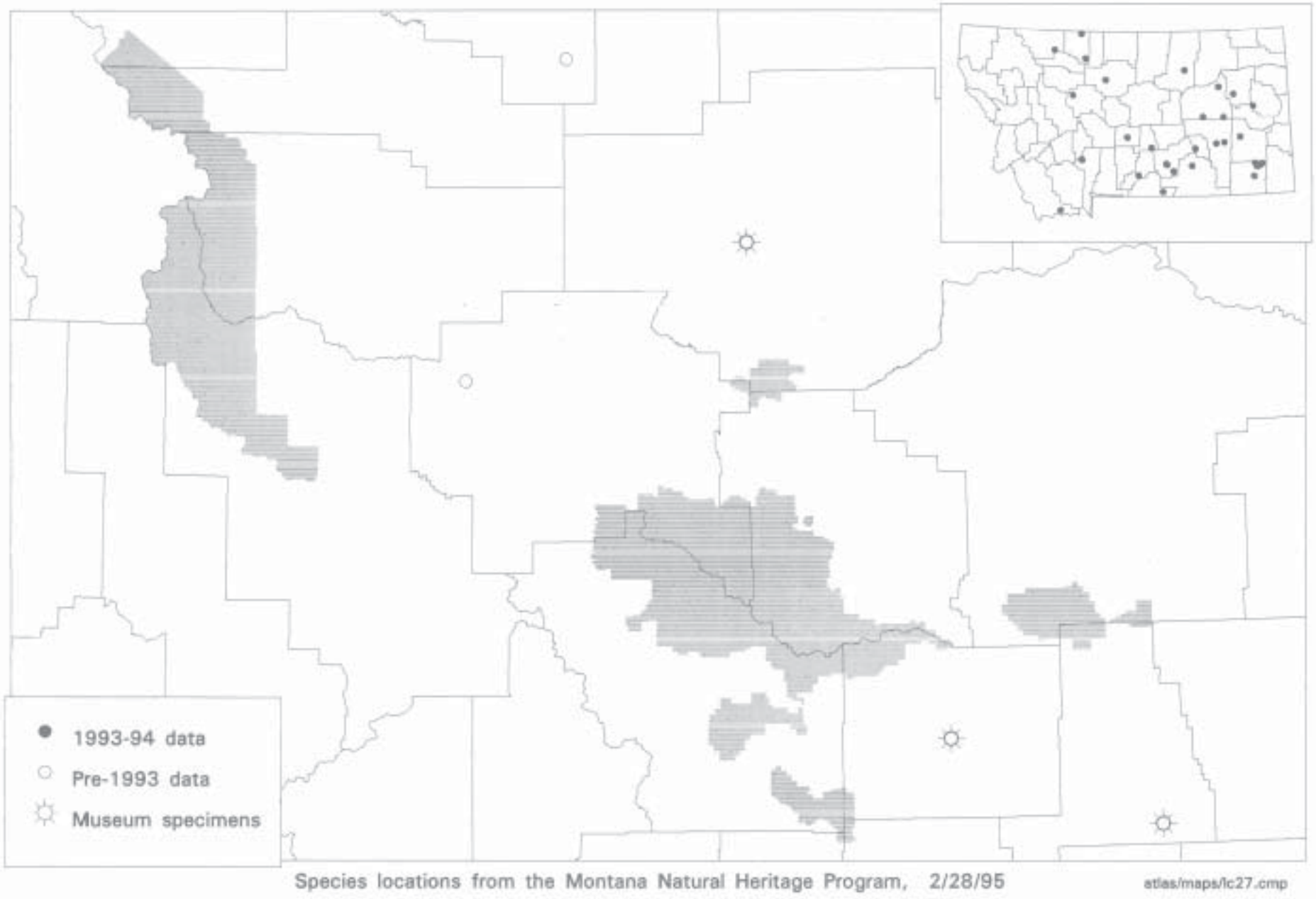
Habits and Habitat: Spiny Softshells are active during the day. This highly aquatic turtle is found in rivers or their connecting backwaters with muddy or sandy bottoms. Unlike other Montana turtles, they do not move overland from one water body to another. Mud and sand banks and bars are used for both basking and nesting. Hibernation takes place beneath the water, usually beneath 5-10 cm of bottom substrate (Ernst *et al.* 1994). The retracted head and neck combines with the profile of the shell to produce a wedge shape, which allows this turtle to escape by literally diving into the bottom mud. If necessary, additional strokes of the legs will completely bury it in the substrate, hidden from view. Food items include fish, crayfish, frogs, toads, aquatic insects, and carrion. Spiny Soft-shells have a surprisingly long, agile neck and can inflict a painful bite. They can be safely handled by grasping the shell on each side between the front and rear legs with the head pointing *away* from the captor.

Surveying: Although various turtle traps can be used for surveys, visual identification is suitable since the three turtle species in Montana are easily distinguished . A pair of binoculars is helpful and surveys should be done on warm sunny days; basking seldom takes place before 10:00 a.m. (Ernst *et al.* 1994). During cold or cloudy weather, turtles tend to remain underwater for long periods and can be missed on a walk-through survey. Care should be taken to watch for the snorkel-like nostrils projecting just above the surface of the water.

Status and Distribution: Found mainly in the Yellowstone and Missouri Rivers and their major tributaries. These populations may be separated from each other and are believed to be disjunct form the population in South Dakota (Ernst *et al.* 1994); they have not been reported from North Dakota (Wheeler and Wheeler 1966). The Missouri River population is known from the tail of Fort Peck Reservoir upstream to the first dam above, and from most of the Mussellshell River; their presence on other tributaries is presently unknown. They have been reported from the Mussellshell River to just southeast of the Little Belt Mountains and should be watched for in the Mussellshell, Judith, and Smith Rivers on the L&CNF. Any located on the L&CNF should be documented and reported. Considered a Species of Special Concern in Montana.

Montana Natural Heritage Program Rank: G5 S3. Species of Special Concern.

Occurrences of Phrynosoma douglasi on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc27.cmp

Short-horned Lizard (*Phrynosoma douglasi*)

Description: The Short-horned lizard has a broad, somewhat flatted body and relatively short limbs and tail. It is generally tan to gray with dark and light spots and blotches; the belly is white. There is a distinctive line of pointed scales along each side and the head has short, blunt ìhornsî pointing backward. Adult lizards range from 1.7 - 5.5" in length.

Young: Young are live-born and resemble small adults.

Similar species: None.

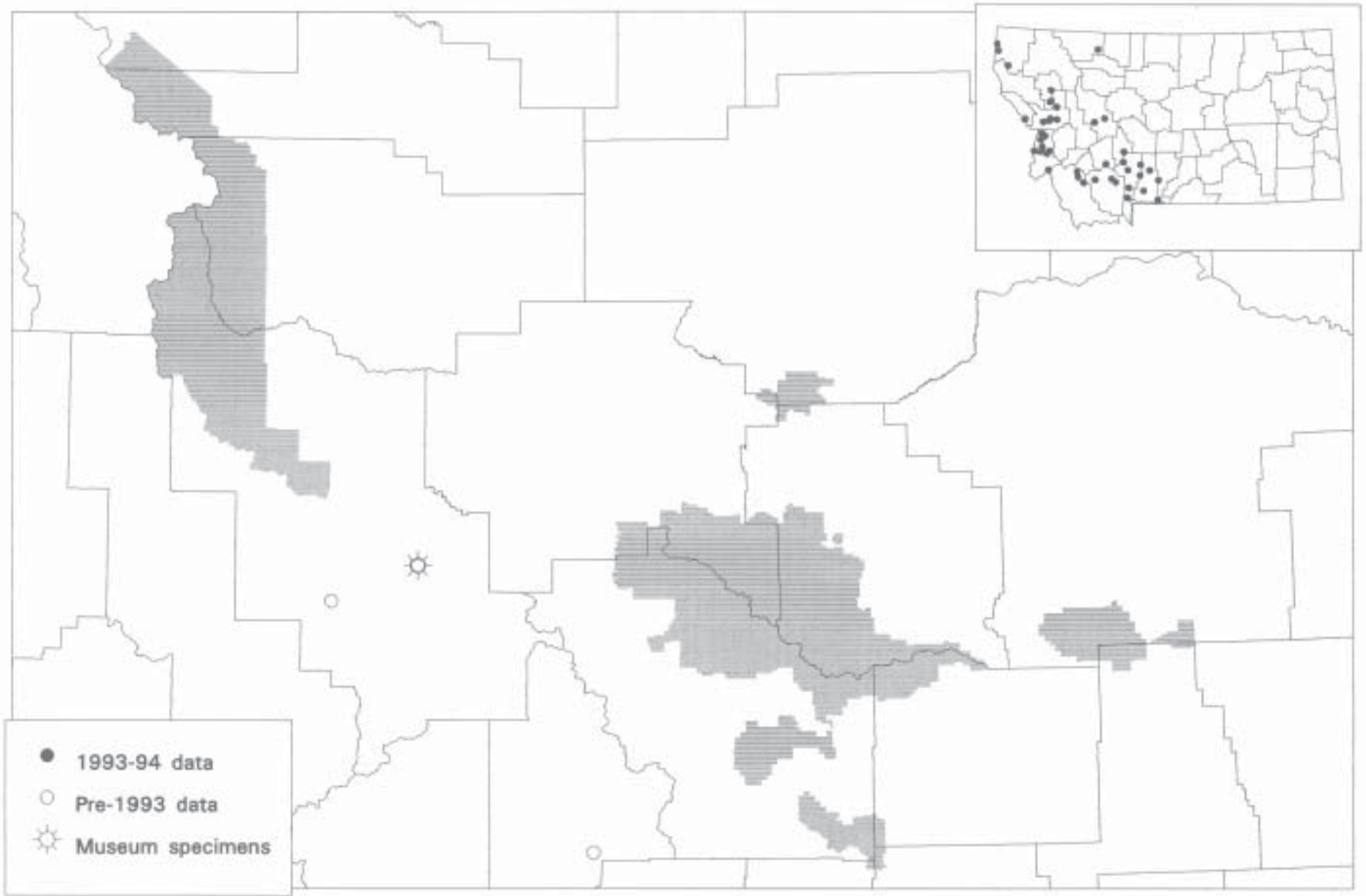
Habitat and Habits: The Short-horned lizard is found in a variety of habitats, including dry open forests, grasslands, and sagebrush; the soil is usually loose or sandy. In firmer soil situations it may use the burrows of other animals. It is active during the day, typically with the peak of activity in mid-late morning. A Short-horned Lizard may squirt blood from its eyes when disturbed. Little is known about reproduction in this part of the range; young are born in late summer. Ants are the primary food of the species.

Surveying: They may be surveyed for by slowly walking through appropriate habitat and carefully watching for them; look carefully near ant mounds; this technique has low success with Short-horned Lizards however. As with many lizards and snakes, they are easily missed. Carefully documented incidental observations may provide the best clues to their distribution. They may be also taken in pitfall or funnel traps in combination with drift fences.

Status: Widely distributed (but apparently localized) in eastern Montana. This species may be vulnerable to collecting for the pet trade and agricultural conversion of native habitats. The Short-horned Lizard subspecies found in Montana (*P. d. brevirostra*) is currently a U.S. Fish and Wildlife Service Category 2 Candidate species (U.S. Fish and Wildlife Service 1994). In the vicinity of the L&CNF it has been found at breaks west of Ulm, Egg Mountain on Nature Conservancy land, north of the Highwood Mountains, and near Harlowton southeast of the Little Belt Mountains. It should be watched for in open pine, prairie, or shrub-steppe habitat with loose or sandy soils at lower elevations on the L&CNF; any sightings should be documented.

Montana Natural Heritage Program Rank: G5 S4.

Occurrences of Charina bottae on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc30.cmp

Rubber Boa (*Charina bottae*)

Description: The Rubber Boa looks and feels like rubber, hence its name. It is a small snake (14-33" length), stout, and uniformly-colored either brown or green on the dorsal side. The ventral surface is cream to tan in color. The scales are small and smooth, except for those on the head which are enlarged. The tail is short and blunt and the eyes are very small. It is a very slow moving snake which can easily be caught if detected.

Young: Rubber Boas are born alive and young are more tan (or even pinkish) than the adults on both the dorsal and ventral surfaces.

Similar species: The Racer is much quicker and more active, has larger eyes, and a thin, tapered (not blunt) tail.

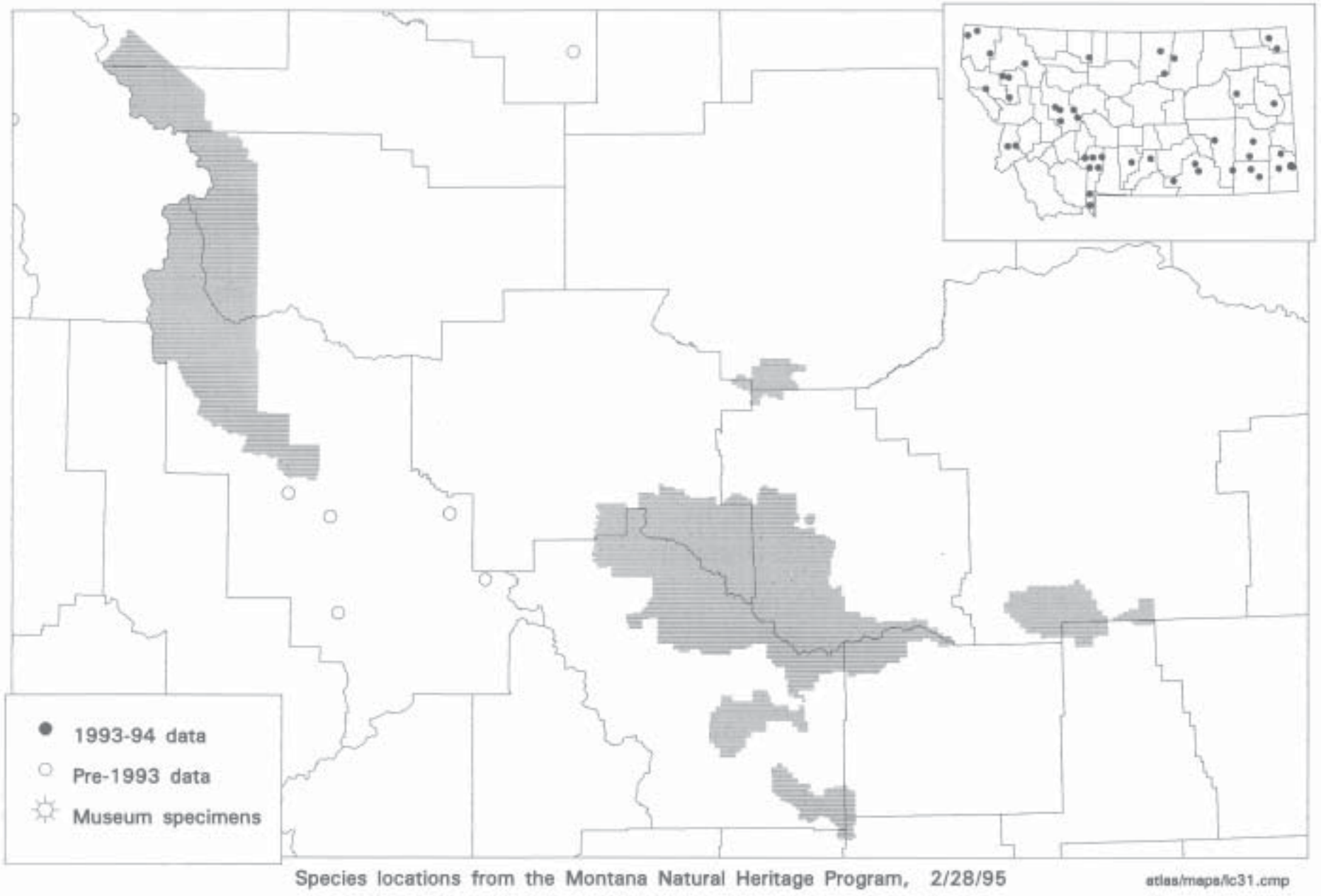
Habitat and Habits: The Rubber Boa is a secretive, slow-moving, docile snake, usually found under logs and rocks in either moist or dry forest habitats, but rarely in marsh or bog situations. Denning locations are typically in areas with fractured rock; recent data indicates it only moves short distances from its den (Peterson pers. comm). Occasionally this snake is seen sunning itself on a road, trail, or open area, but it is primarily nocturnal. Feeding is primarily on small mice, but also on shrews, salamanders, snakes and lizards. Two to eight young are born alive in late summer or early fall.

Surveying: There are no practical methods for surveying other than systematic searches of a given area rolling over rocks, logs, etc. Driving roads at night, particularly after a rain when the temperature is $> 10^{\circ}$ C, may be more effective, especially on roads which follow a stream. Previous sightings are of value in locating general areas of activity and denning sites. Funnel traps may be effective.

Status: Sightings of Rubber Boas are infrequent, but they are widely distributed and probably common throughout western Montana. They were not found during this survey, nor are there historic records of their presence in the L&CNF. However, they probably do occur throughout the RMRD of the L&CNF at low to mid-elevations. They should be watched for on the L&CNF; any sightings should be documented. Of particular interest would be any reports of this species from the Jefferson Division or documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S4.

Occurrences of Coluber constrictor on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc31.cmp

Racer (*Coluber constrictor*)

Description: A slender, but moderately long snake, the Racer ranges from 20-65 inches in length. Adult coloration is uniform across the dorsal side but it can vary from a greenish-gray to brown or blue. The ventral side is whitish to pale yellow, the latter color extending onto the upper lip scales and nasal region. The eyes are relatively large. The scales are smooth and the nostril is bordered by two scales.

Young: Snakes (up to about 20") have a much different coloration than the adults consisting of a series of dorsal brown blotches edged with black which run the length of the animal; a row of blotches is also found on each side of the animal extending onto the ventral side.

Similar species: Young Gopher Snakes may be distinguished by the keeled rather than smooth scales of the young Racer. Young Western Hognose Snakes have an upturned nose. Smooth Green Snakes are smaller and colored bright grass-green and whitish below; their nostrils are centered in single scales. Also see Rubber Boa.

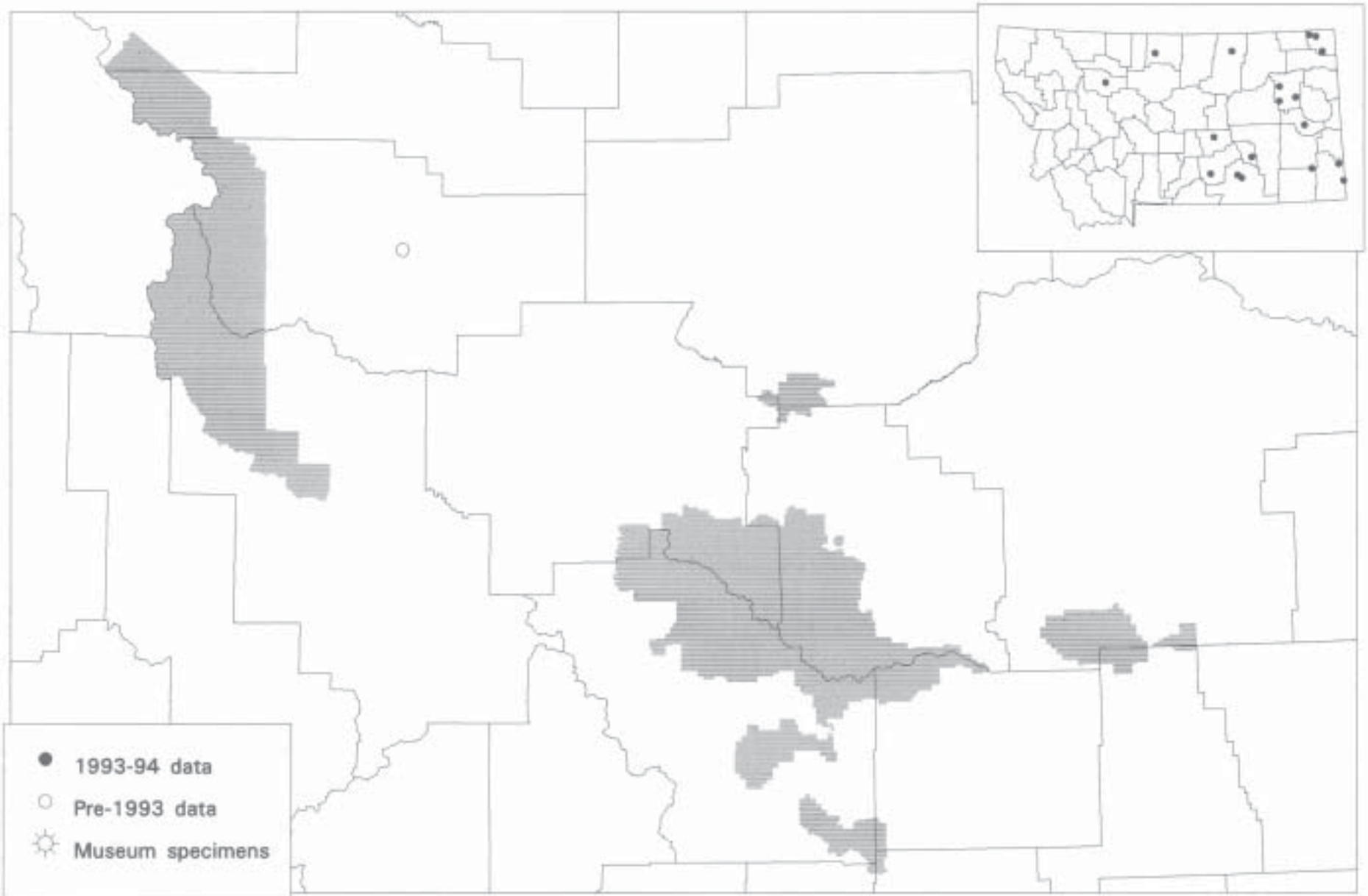
Habitat and Habits: The Racer is associated with more open habitats either in shortgrass, shrub-steppe, or forested areas (Hammerson 1982a, Baxter and Stone 1985). It is often found near water and rocks. The Racer is an extremely fast and agile snake. A clutch of perhaps 3-7 eggs is laid in the summer (Stebbins 1985). It preys on insects and small vertebrates such as mice and frogs.

Surveying: They may be surveyed for by slowly walking through appropriate habitat on warm, sunny days and carefully watching for them; this technique is moderately effective for the Racer. However, as with many lizards and snakes, they may easily be missed. Carefully documented incidental observations may provide the best clues to their distribution. They may be also taken in funnel traps with drift fences. Mark-recapture methods offer the best opportunity for determining population status.

Status: The Racer was not seen in this survey nor are there historic records from the L&CNF. However they are known just to the south of the RMRD and from about 25 miles west of the Little Belt Mountains. They probably do occur on the L&CNF at low to mid-elevations; any sightings should be documented. Of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S5.

Occurrences of Heterodon nasicus on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc32.cmp

Western Hognose Snake (*Heterodon nasicus*)

Description: The Western Hognose Snake is a mid-sized, heavy-bodied snake reaching 32". The dorsal ground color is yellowish- to grayish-brown, with 3 rows of darker brown to black blotches run down the back. The belly is dark gray to black, sometimes checkered. Its nose has a keel on the top and is upturned.

Eggs and Young: Eggs are white and elliptical, with thin, papery shells; length averages 32.5 mm (26-38 mm) and width 18 mm (14-23 mm). Young are 139-197 mm at hatching and are similar in color and pattern to adults (Platt 1969).

Similar Species: No other Montana snake has a keeled nose. Coloration is similar to both the Gopher Snake, Western Rattlesnake and juvenile Racer.

Habits and Habitat: The Western Hognose Snake is found on the plains of eastern Montana. It seems to prefer arid areas, farmlands and floodplains, and particularly areas of gravelly or sandy, loose soil. The keeled, or shovel-like, nose is thought to help it to dig down to its food, which it finds by smell. Apparently toads are its preferred food, though frogs, insects, and other small animals are also eaten (Platt 1969). It is active primarily during the daylight hours. Little is known of reproduction in Montana. In Kansas, Western Hognose Snakes typically lay clutches of 7-15 eggs (Platt 1969). It is likely that a female will only breed every other year in Montana.

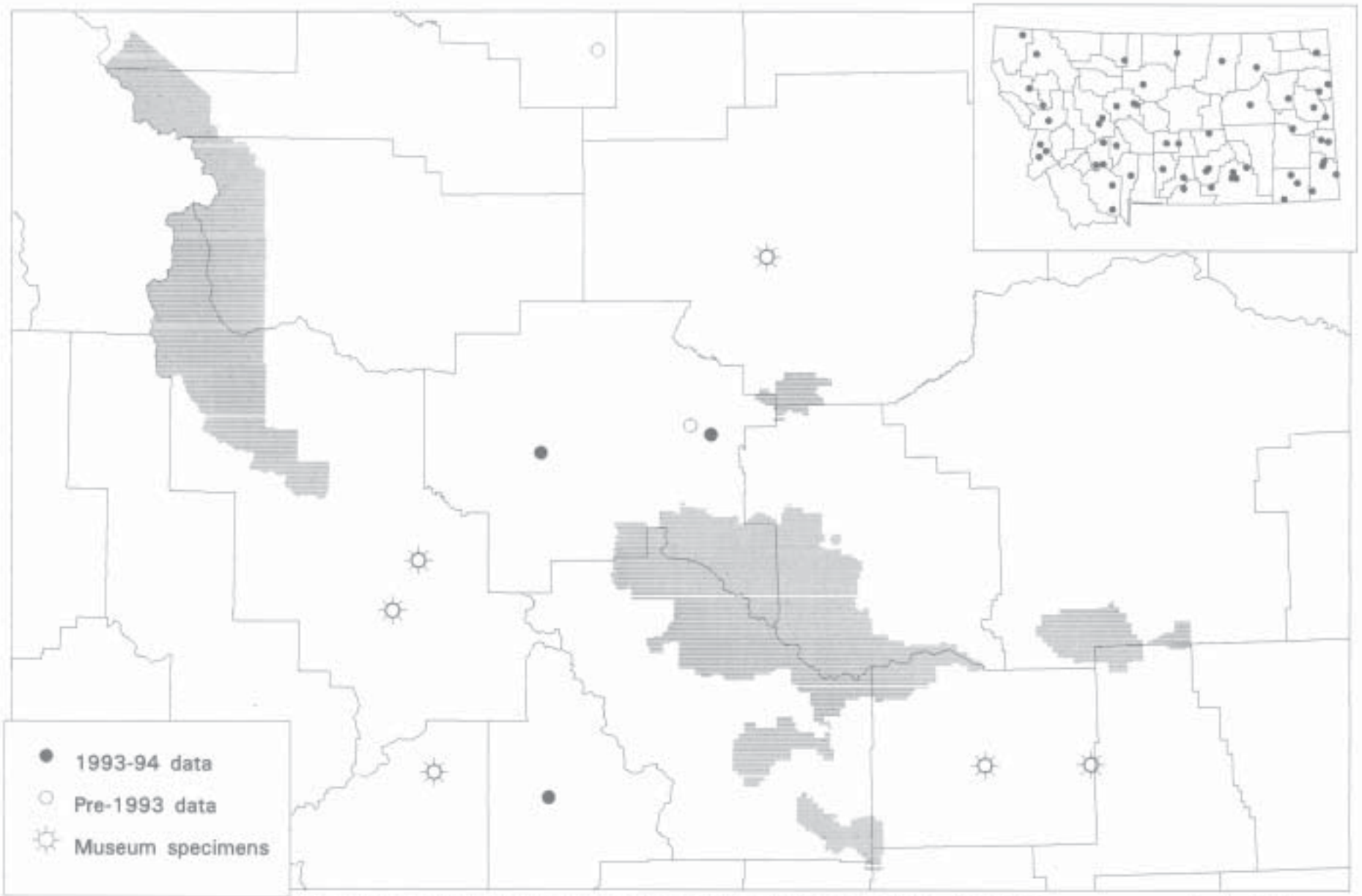
The Hognose is famous for its behavior in the face of a threat. At first it will puff up its neck, as does a cobra, and hiss and strike at its enemy. However, this is all a bluff and very rarely will it actually bite. If this threatening strategy does not work, it will pretend to die. It appears to go into convulsions, writhing on the ground, sticking its mouth in the dirt, and eventually rolling on its back and going into a trance that makes it appear to be dead. If turned right-side-up, it will roll back over and continue its deception. If left alone for a few minutes, it will right itself and continue on its way. The initial aggressive display and basic rattlesnake-like coloration cause many to be killed needlessly by people who mistakenly believe it to be venomous.

Surveying: They may be surveyed for by slowly walking through appropriate habitat and carefully watching for them; timing surveys for warm sunny days enhances sampling success. However, as with many lizards and snakes, they may easily be missed. Carefully documented incidental observations may provide the best clues to their distribution. They may be also taken in pitfall or funnel traps with drift fences. Mark-recapture methods offer the best opportunity for determining population status.

Status: They were not found during this survey, nor are there historic records of their presence in the L&CNF. However, they may occur on the L&CNF at low to mid-elevations, particularly in sandy or loose soil areas. The nearest location to the L&CNF is from central Teton County about 30 miles east of the RMRD. They should be watched for on the L&CNF; any sightings should be documented. We have relatively few reports of the Western Hognose Snake from Montana. It is collected for the pet trade, and populations may be vulnerable to commercial collectors. Additionally, since toads are its preferred food, any decline in toad populations would be expected to negatively impact Western Hognose Snakes. Of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S3? Species of Special Concern.

Occurrences of Pituophis catenifer on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atles/maps/lc35.cmp

Gopher Snake (*Pituophis catenifer [=melanoleucus]*)

Description: Montanaís largest snake, the adult Gopher Snake (also called Bullsnake or Pine Snake) can reach a total length of 7 feet, but most specimens seen in western Montana range between 3-5 feet. It is readily recognized by a series of large black to brown blotches which run down the back, and another series along the sides. The blotches, which are set on a yellow background, become more widely spaced and darker towards the tail. The dorsal scales are keeled. There is usually a black band on the head located in front of and extending below the eyes. The ventral coloration is yellow to white, often spotted with black, and the anal plate is undivided.

Eggs and Young: Gopher Snakes lay between 2-24 eggs during the summer months (Hammerson 1982a), and the young resemble the adults in coloration.

Similar species: Young Racers have a black border on dark blotches and the scales are not keeled. Young Western Hognose Snakes have an upturned nose. Western Rattlesnakes have a rattle on their tail and triangular shaped heads.

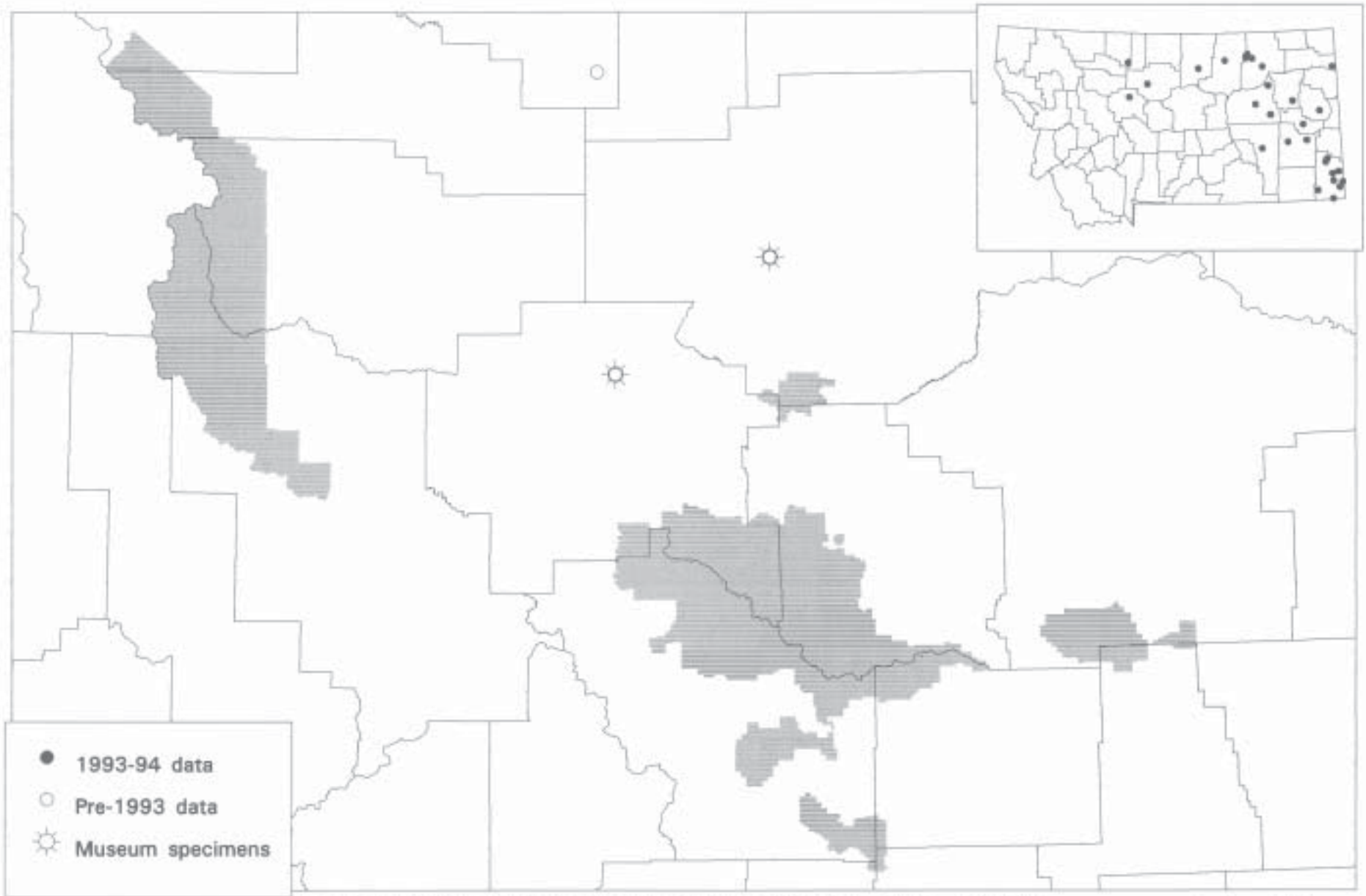
Habitat and Habits: Gopher Snakes are associated with dry, arid habitats including grassland, shrub-steppe, and open pine forest. They feed on rodents, rabbits and ground dwelling birds, and to a lesser extent on frogs, toads, etc., found around stock ponds and other wetlands. They have a habit of hissing and vibrating the tail when alarmed, often sounding like rattlesnakes. They occasionally climb trees, hence the common name ìPine Snake.î

Surveying: Walk-through surveys, done on a regular basis in warm, sunny weather probably give the best results without resorting to trapping techniques. They are most easily found near dens in the spring and fall. Funnel trapping is effective and they may occasionally be found by night driving during the mid-summer. Data can be enhanced by mark-recapture techniques.

Status: The Gopher Snake was not seen in this survey nor are there historic records from the L&CNF. However they are known from lower elevation areas on the plains adjacent to the forest. They probably do occur on the L&CNF at low to mid-elevations; any sightings should be documented. Of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S5.

Occurrences of Thamnophis radix on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc37.cmp

Plains Garter Snake (*Thamnophis radix*)

Description: The Plains Garter Snake ranges in size from 16-42" in length and has a dorsal background color of olive, brown, or black. It has a prominent orange or yellow dorsal stripe and a greenish-yellow stripe on each side located on the 3rd and 4th scale rows above the belly scales. It typically has black vertical bars on the upper lips.

Young: Young resemble adults.

Similar species: The other garter snakes found in Montana have the lateral yellow lines on the 2nd and 3rd scale rows above the belly scales.

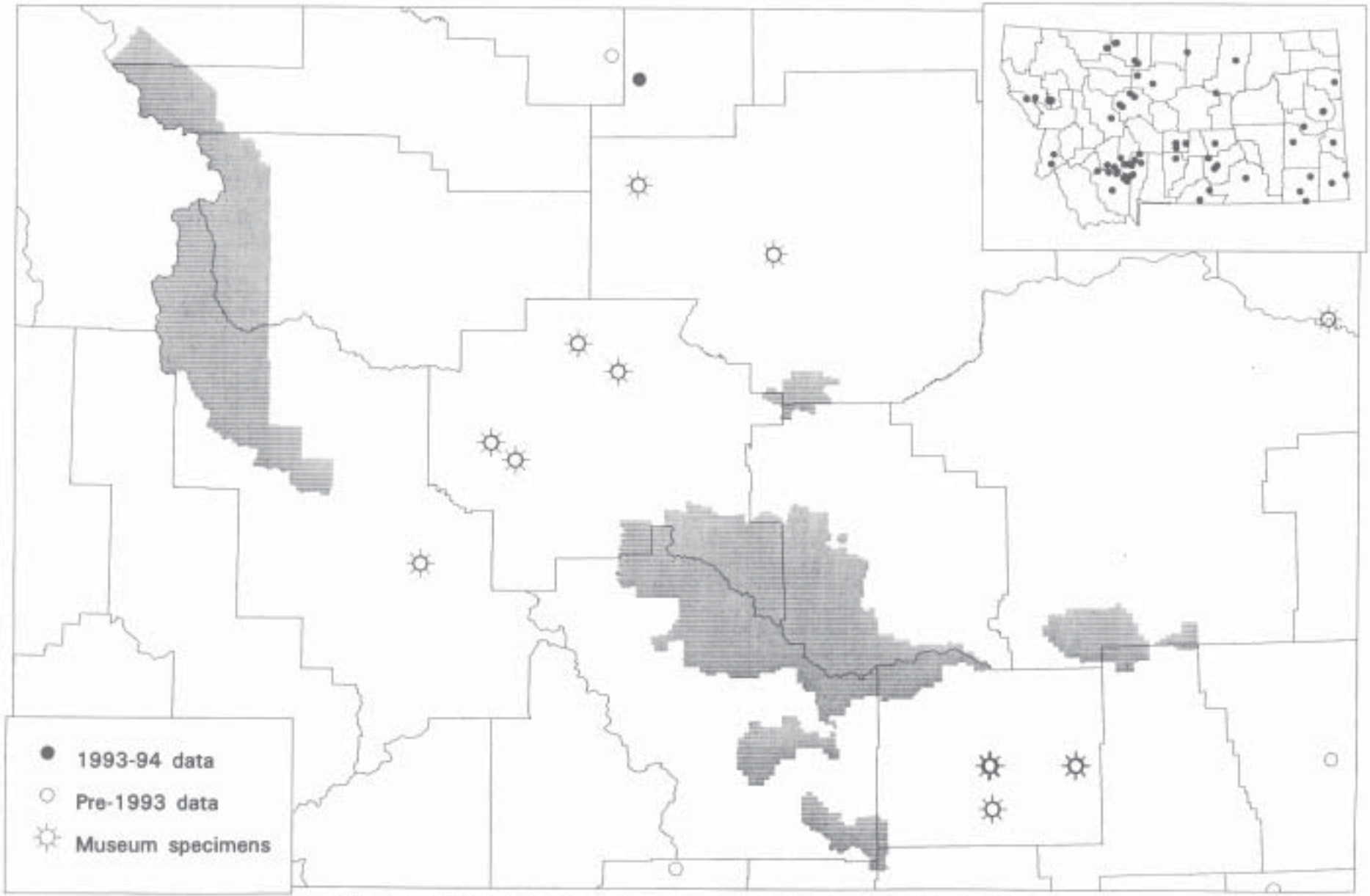
Habitat and Habits: The habitat and habits of the Western Terrestrial Garter Snake are similar to those of the Common Garter Snake.

Surveying: Timed sight surveys may be conducted around wetlands and riparian feeding areas or at denning areas where higher concentrations of garter snakes occur; clear mornings may be the best survey times. Much distributional information may come from recording incidental sightings. More intensive research may be done using funnel traps in combination with drift fences. More intensive research and survey projects may use mark-recapture or radiotelemetry techniques.

Status: Found over much of eastern Montana. Its status is unclear due to confusion in the identification of the 3 garter snakes which occur there. In the vicinity of the L&CNF it has been found near Great Falls and north of the Highwood Mountains. It should be watched for in prairie or shrub-steppe areas at lower elevation of the L&CNF and any sightings should be well documented with a description written at the time of observation including how *radix* was distinguished from the other garter snakes. Of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S4.

Occurrences of Crotalus viridis on or near the Lewis & Clark National Forest



Species locations from the Montana Natural Heritage Program, 2/28/95

atlas/maps/lc39.cmp

Western Rattlesnake (*Crotalus viridis*)

Description: Rattlesnakes have a heat-sensing pit located between the nostril and the eye. The fangs are hollow and hinged, allowing them to be folded back against the roof of the mouth. The head is triangular in shape and blunt-nosed. The eyes are slightly elevated. There are several white lines which run along the side of the head. Adult Western Rattlesnakes have a narrow neck but a stout body with total length ranging from 15-60 inches. The dorsal background color varies from pale green to brown with a series of brown or black blotches edged with a dark and then light line extending the length of the body. The blotches often merge into rings on the tail. There are also blotches on the sides of the body. The ventral side is pale yellow to white and without blotches. The scales are keeled. The tail ends in a rattle which helps to warn potential predators of the snakeís presence. The young have the same color pattern, but are brighter in color than adults.

Similar species: No other snake in Montana has rattles, but see Racer, Gopher Snake and Western Hognose Snake which may have similar color patterns.

Habitat and Habits: The Western Rattlesnake is an inhabitant of more open and arid country but it is also found in Ponderosa pine stands or mixed grass-coniferous forests. It is more likely to be encountered on south-facing slopes and areas of rock outcrops. It is feared and often needlessly killed due to its poisonous bite. Rattlesnakes may den in large numbers, moving up to 7 miles out from the dens during the summer (Peterson, pers. comm.); den sites are most common in south-facing talus slopes. In Wyoming, it is found at elevations of over 8500 feet (Baxter and Stone 1985). Rattlesnakes prey on a variety of animals including mice, ground squirrels, rabbits, amphibians, and other snakes. Females give birth to 4-21 young in Colorado during the summer (Hammerson 1982a).

Surveying: Walk-through surveys on warm sunny days is probably the best method for determining presence/absence; easiest to find near den sites in spring and fall. Funnel traps and night driving are both effective techniques. Mark-recapture methods can be used to determine more precise numbers.

Status: The Western Rattlesnake was not been found in the L&CNF but is known from lower elevation areas to the north, south, and east. It would most likely be encountered at lower elevations in open habitats on the Jefferson Division. The habit of denning at traditional sites in large numbers makes rattlesnakes vulnerable to commercial collecting or simply killing by fearful people. Observations of Western Rattlesnakes should be reported to document the presence of this species on the L&CNF; of particular interest would be documentation of any denning sites located.

Montana Natural Heritage Program Rank: G5 S4.

Rocky Mountain Division Information

Rocky Mountain Division: Two amphibian species were only found on the Rocky Mountain Division of the L&CNF: the Long-toed Salamander and Tailed Frog. Both species appeared to be more localized than in areas to the west of the Divide. Additional surveys should be undertaken to determine how widespread these species are; all incidental observations should be recorded. The Rubber Boa is likely to be present due to its proximity to known localities to the south and west; whether it will also be found in the Jefferson Division is unknown.

Other species found during surveys or for which historic locations are known from on the RMRD include the: Western Toad, Western Chorus Frog, Northern Leopard Frog, Spotted Frog, Western Terrestrial Garter Snake, and Common Garter Snake. All of these species are also present on the Jefferson Division. The Western Toad was only found breeding at a single location on the forest; this may be a function of the small amount of sampling or the apparent decline in much of western Montana. The breeding location in the backwater/beaver pond on the Teton River at 7 Lazy P Ranch should be considered for monitoring to see if Western Toads continue to breed there and are successfully reaching metamorphosis. Western Chorus Frogs, though common at lower elevations outside the L&CNF, apparently are very uncommon and localized within the forest. No Northern Leopard Frogs were seen on surveys. However a museum specimen exists from the ìSun River, 5500 feetî; this location information is poor because at 5500 feet the Sun River is split into the major forks. While doing Harlequin surveys, Northern Leopard Frogs should be watched for along the Sun River. Substantial populations of the Spotted Frog were found throughout the RMRD; it was more commonly encountered than any other amphibian or reptile, though ironically it is one of the two C-2 Candidate species present on the L&CNF. An ideal marsh-pond area below Wood Lake on Wood Creek might be considered for long-term monitoring of Spotted Frogs and Long-toed Salamanders; the area to be monitored would have to be carefully delimited, however, since the area is large. Concerned citizens might be willing to participate in long-term surveys.

Given the low numbers of locations for any amphibians or reptiles on the RMRD, all sightings of any species should be recorded. A possible exception would be for Spotted Frogs; however, breeding locations found should be recorded even for this species until more are known and mapped. Of particular interest would be records of the following species which have not yet been recorded on the District: Tiger Salamander, Great Plains Toad, Plains Spadefoot, Painted Turtle, Short-horned Lizard, Racer, Western Hognose Snake, Gopher Snake, Plains Garter Snake, and Western Rattlesnake. All of these potentially present species are most likely to be seen at low elevations in open habitat.

Jefferson Division Information

Highwood Mountains: This range is the only Jefferson Division area in which Western Chorus Frogs are known; they were found by Mike Enk in 1994 and had been collected in the 1960s north of the 1994 location. The Western Chorus Frog is the only herp recently recorded from the Highwoods. The

Western Toad, Northern Leopard Frog, Western Terrestrial Garter Snake, and Common Garter Snake were all collected along Highwood Creek or Arrow Creek in the 1960s but were not relocated during our surveys. Perhaps the best chance of finding the Great Plains Toad on the L&CNF occurs in the Highwoods, given its known site to the north. Given the meager information available from this range and at least two species (known to be declining) recorded from historic records but not relocated, all sightings of amphibians and reptiles are of interest from this range and should be recorded. Baseline distribution information, particularly for species not yet recorded and breeding sites for known species, is necessary before monitoring sites are chosen.

Little Belt Mountains: Spotted Frogs appeared to be common and widespread in this range. Western Toads have been collected historically, but were not located during our surveys; any sightings of this declining amphibian should be recorded. The Western Terrestrial Garter Snake and Common Garter Snake were the only other herps found during our surveys. Perhaps the best chance of finding the Spiny Softshell on the L&CNF occurs in the Little Belts in the Smith, Judith, or Mussellshell Rivers. Given the meager information available from this range and at least one species known from historic records but not relocated, all sightings of amphibians (except perhaps Spotted Frogs) and reptiles are of interest and should be recorded. Even for Spotted Frogs any breeding locations found should be recorded. Such baseline distribution information is necessary before monitoring sites are chosen.

Castle Mountains: The Spotted Frog is the only herp known from this range; there is one historic specimen record and the species was also found during our 1994 surveys in beaver ponds in the West Fork of Checkerboard Creek. Tiger Salamander larva were found at the base of the range just north of Lennep off USFS Lands. Given the meager information available from this range all sightings of amphibians and reptiles are of interest and should be recorded. Baseline distribution information, particularly for species not yet recorded and breeding sites for known species, is necessary before monitoring sites are chosen.

Crazy Mountains: The Spotted Frog was the only herp found during surveys in 1994 and was located in Forest Lake. Western Toads have been collected historically in the Crazy Mountains, but were not located during our surveys; any sightings of this declining amphibian should be recorded. Given the meager information available from this range all sightings of amphibians and reptiles are of interest and should be recorded. Baseline distribution information, particularly for species not yet recorded and breeding sites for known species, is necessary before monitoring sites are chosen.

Big Snowy Mountains: The Western Terrestrial Garter Snake is the only herp known from this range; there are three historic specimen records and this species was found during our 1994 surveys on the shore of Crystal Lake. Given the meager information available from this range, all sightings of amphibians and reptiles are of interest and should be recorded. Baseline distribution information, particularly for species not yet recorded and breeding sites for known species, is necessary before monitoring sites are chosen.

Little Snowy Mountains: No herps are known from this range; there are no historic specimen records and we did not survey here in 1994. Given the total lack of information available from this range, all sightings of amphibians and reptiles are of interest and should be recorded. This baseline distribution information, particularly for species not yet recorded and breeding sites for known species, is necessary before monitoring sites are chosen.

RECOMMENDATIONS

1) All incidental sightings of amphibians and reptiles from the L&CNF should be recorded and forwarded to the Natural Heritage Program. The single exception being that for the Spotted Frog on the RMRD and Little Belt Mountains, only breeding locations are necessary to record. A half-day training session for biologists (including seasonal employees) and other interested field people in May would raise awareness of this data need and provide the training needed for accurate identification of animals observed. Certainly all Tailed Frogs (larvae and adults) found during fisheries surveys should be recorded; this is the most efficient way to get data on this species. The Tailed Frog is now a USFWS C-2 Candidate.

2) Due to the time constraints and the large area covered in the 1994 survey, it should not be regarded as a definitive index of all the herptiles or their distribution on the L&CNF. The secretive habits of many amphibians and reptiles, and our lack of knowledge regarding their reproductive behavior makes it difficult to assess their overall status. We recommend that additional surveys be conducted, concentrating on: A) potential Western Toad and Northern Leopard Frog breeding sites; B) low-elevation, xeric habitats (including wetlands within this matrix) for reptiles and plains-dwelling amphibians; C) re-surveying historic amphibian sites; and D) gathering additional distribution information from the isolated ranges on the Jefferson Division.

3) When more breeding locations for amphibians are known, long-term monitoring of typical marsh-pond habitats should be set up at several sites in each Division in order to evaluate relative numbers and breeding success of the more common species: Long-toed Salamander, Spotted Frog, Western Toad, Western Chorus Frog, Western Terrestrial Garter Snake, and Common Garter Snake. Particular attention needs to be given to any Western Toad and Northern Leopard Frog breeding sites found.

4) Life history and ecology of the amphibians in Montana is poorly known for most species. Long-term monitoring will give us information on timing of and habitat requirements needed for successful breeding.

5) Sightings on L&CNF lands of the Tiger Salamander, Great Plains Toad, Woodhouseís Toad, Plains Spadefoot, Painted Turtle, Spiny Softshell, Short-horned Lizard, Rubber Boa, Racer, Western Hognose Snake, Gopher Snake, Plains Garter Snake, and Western Rattlesnake would represent first-time occurrences and range extensions, thus it is important to document and record such data. Preferably either photos should be taken or, if appropriate, a specimen collected; at the very least, a description should be written at the time of the observation.

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APPENDIX 1.

DATA SHEETS USED FOR

AMPHIBIAN AND REPTILE

SURVEYS AND OBSERVATIONS

AMPHIBIAN SURVEY DATA SHEET: INSTRUCTIONS This data sheet is designed to facilitate quick recording of data from field surveys of amphibians and their habitats. It appears complex and intimidating, but actually can be completed in a short amount of time after a minimum amount of training. Many variables require only the correct choice to be circled, and the remaining variables are numerical and easy to determine. The data sheet is divided into four sections, divided by double lines. Each section describes a cohesive set of variables. In addition the back of the sheet includes a grid for a rough sketch of the site and space for additional comments. The map is optional, but the future value of the data is enhanced if it is supplied.

SECTION 1 – LOCALITY *These data are essential. Many amphibian surveys have been hampered by the inability to relocate exact locations in the historical record. Some of this information can be completed in the office after the survey.*

DATE: Use the format DD-MMM-YY (e.g., 05-APR-92).

BEGIN TIME: List the time survey of habitat for amphibians began in 24 hour format.

END TIME: List the time the survey ended in 24 hour format. (The total time (END TIME - BEGIN TIME) should reflect only the amount of time spent searching for amphibians. Total time plus number of observers may be used to assess relative abundance.)

OBSERVERS: List names or initials of all persons involved in searching.

LOCALITY: Describe the *specific* geographic location of the site. Use air distance in two directions (e.g., 5km N and 7.5 km W) of a map landmark that likely will not change (distance from a large town or city is not all that helpful).

STATE: Use the 2-letter abbreviation.

COUNTY:

MAP NAME: List the name of the U.S.G.S. quadrangle or other map used to locate the site.

OWNER: List the public land manager (e.g., Roosevelt Nat. Forest or Rocky Mtn NP), or name of the owner if the site is on private land (listing the owner's name will make it clear that you did not trespass to survey the site).

ELEVATION: Circle the scale used; meters are preferred.

T: township **R:** range **S:** section

SECTION DESCRIPTION: Describe the location of the site within the section (e.g., SE ¼ or NE ¼ of SE ¼)

UTM ZONE, NORTHING, EASTING: Universal Transverse Mercator coordinates are preferred over longitude and latitude. The UTM zone is listed on newer topographic maps. If you are using a map without the UTM grid, substitute latitude for Northing and longitude for Easting.

SECTION 2 – SPECIES DATA *List all amphibian species observed. If garter snakes are seen, list them here also.*

SPECIES: Use the scientific name. Convenient shorthand is to use a 4-letter code made up of the first 2 letters of the genus and species (e.g., *Rana sylvatica* would be RASY).

ADULTS/JUVENILES: Indicate presence with a check, but numbers seen are more valuable data

CALLING?: Circle Y if frogs are vocalizing in a breeding chorus, of if a breeding aggregation of species that don't call (e.g., *Bufo boreas*) is observed.

TADPOLES/LARVAE: Same as for adults/juveniles

EGG MASSES: Same as above. Numbers of egg masses are especially valuable data. If possible, describe the developmental stage of eggs in the space for additional notes on the back of the form.

METHOD: Circle how observations were made: **VISUAL/AURAL ID** – species identified without picking it up, either by sight or by recognition of the breeding call; **HAND COLLECTED** – animal was picked up and identified in the field (higher confidence than visual id); **DIP NET/SEINE** – the usual method of collection for larvae; **TRAPPED** – minnow-type traps are also used for larvae; **VOUCHER COLLECTED?** – circle yes or no (voucher specimens are recommended for every site, *especially if identification is uncertain and for larvae*). Indicate voucher status in addition to method used.

FISH PRESENT?: If yes, list species if you can. Circle the question marks if you are not certain, but suspect that fish are present.

ENTIRE SITE SEARCHED?: If no, list either the meters of shoreline or the area (m^2) of habitat (e.g., amount of wet meadow) searched.

SECTION 3 – PHYSICAL AND CHEMICAL DATA *Water chemistry data are difficult to collect accurately without thorough planning and quality equipment; these data are optional. Weather data are important for determining the quality of the observations (e.g., was an absence of amphibians due to observations made during a blizzard?)*

WEATHER, WIND: Indicate atmospheric conditions.

AIR TEMPERATURE: Take at chest height in shade. The Celsius scale is preferred.

WATER TEMPERATURE: Take 1 meter from margin and at 2 cm depth, or where egg masses are observed.

COLOR: This is a qualitative assessment of whether the water clear or tea-colored from organic (humic) acids.

TURBIDITY: This is a qualitative assessment of whether the water clear or clouded from suspended particulate matter.

SECTION 4 – HABITAT DESCRIPTION *These data are important for developing hypotheses to explain changes in abundance of amphibians. This section needs to be filled out only once for each site (a reasonable amphibian survey should include at least 2 – 3 visits to each site in one season).*

ORIGIN: Decide whether the lake is a natural geologic formation or man-made. Bodies of water enlarged by a dam are problematic. List them as man-made, but add an explanation in the space for additional notes on the back of the form.

DRAINAGE: Circle whether the site has permanent drainage, no drainage, or occasional drainage. Determining the potential for occasional drainage requires judgement. Look for clues in the topography and vegetation.

DESCRIPTION: Decide how best to describe the site. If there is evidence of past or present beaver activity, circle one of these choices in addition to your choice.

LENGTH, WIDTH: Record the maximum length and width of lakes and ponds. For streams, record the length and average width of the reach searched.

MAXIMUM DEPTH: Most times, you will not have access to a boat, so estimate depth (deep lakes are usually not important to amphibians).

STREAM ORDER: This is an index of stream size, and you will need a topographic map to determine it. First-order streams have no tributaries, second-order streams are formed by the confluence of two 1st-order streams, third-order streams are formed by the confluence of two 2nd-order streams, and so on.

PRIMARY SUBSTRATE: Circle the type that covers the majority of the bottom of the site.

EMERGENT VEGETATION: Circle the percentage of the margin of the site with emergent vegetation present, and list the dominant species. If you are botanically-disadvantaged, list the categories of the dominant species (e.g., cattail, sedges, etc.).

NORTH SHORELINE CHARACTERS: Describe the north shore of a lake or pond in terms of shallow water and emergent vegetation. This is important in evaluating quality of breeding habitat in some mountain locations.

FOREST CHARACTERS: List the closest distance between the water and the surrounding forest, and list the most common tree species. Leave these fields blank if there is no forest. Describe other surrounding habitat types in the notes section on the back of the form.

AMPHIBIAN SURVEY DATA SHEET – US FISH & WILDLIFE SERVICE, 4512 McMURRY AVE, FT. COLLINS, CO 80525-3400

(circle choice for shaded variables; supply value for others) (ver. 2/7/92)

DATE	BEGIN TIME	END TIME	OBSERVERS

LOCALITY

STATE	COUNTY	MAP NAME	OWNER	ELEVATION (circle scale) M FT

T	R	S	SECTION DESCRIPTION	UTM ZONE	NORTHING (or LAT)	EASTING (or LON)

AMPHIBIAN AND/OR GARTER SNAKE SPECIES PRESENT (INDICATE NUMBERS IN CATEGORIES IF POSSIBLE) — CIRCLE METHOD AND INDICATE IF VOUCHER SPECIMEN WAS COLLECTED

SPECIES	ADULTS/JUVENILES	CALLING?	TADPOLES/LARVAE	EGG MASSES	METHOD:
		Y N			VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO
		Y N			VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO
		Y N			VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO
		Y N			VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO
		Y N			VISUAL/AURAL ID DIP NET/SEINE HAND COLLECTED TRAPPED VOUCHER COLLECTED? YES NO

FISH PRESENT?	YES ??? NO	FISH SPECIES:		
ENTIRE SITE SEARCHED?	YES NO	IF NO, INDICATE AREA	METERS OF SHORELINE M² OF HABITAT	

PHYSICAL AND CHEMICAL ENVIRONMENT (CHEMISTRY VARIABLES OPTIONAL - USE EXTRA SPACES FOR ADDITIONAL MEASUREMENTS)

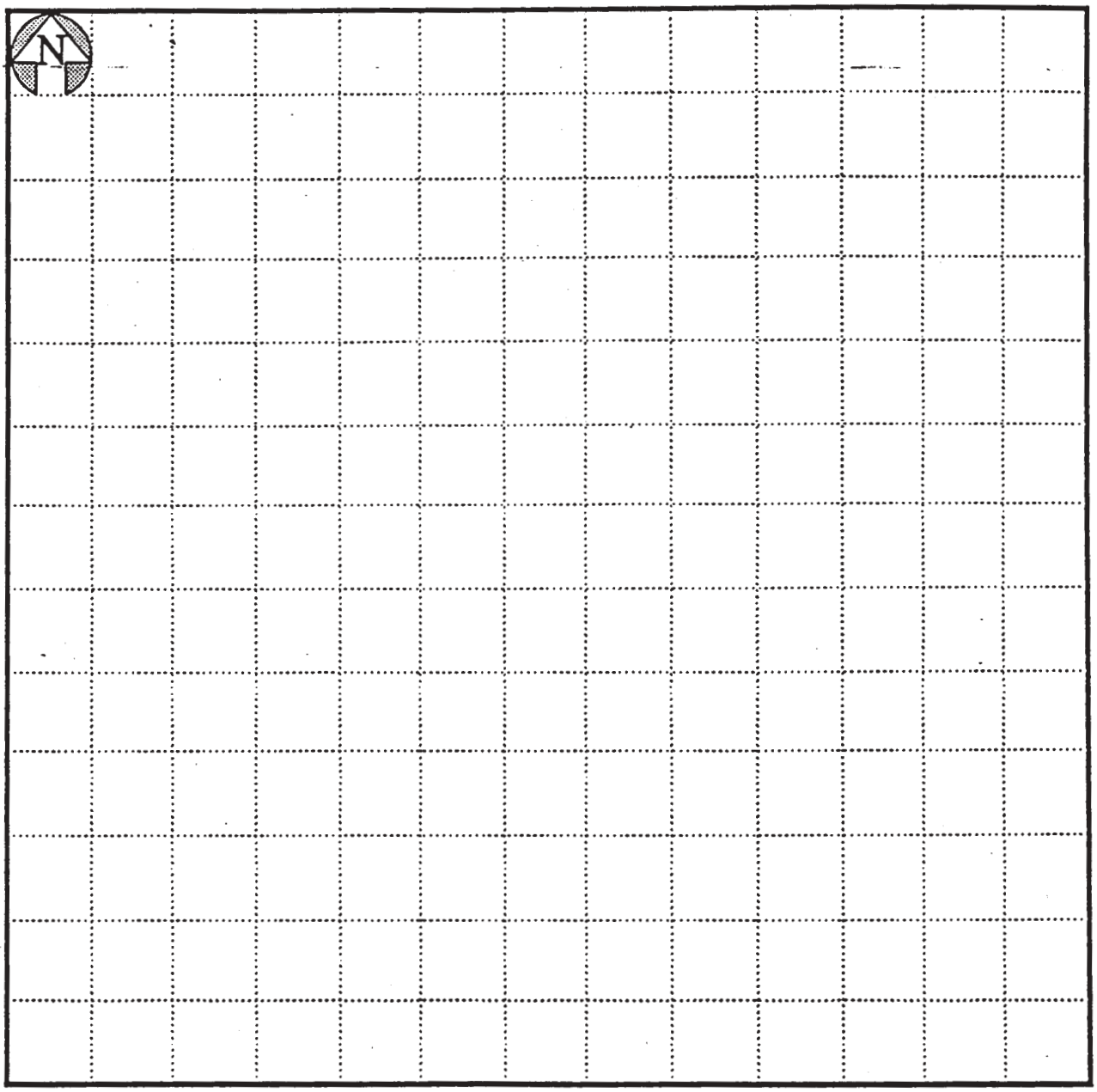
WEATHER: CLEAR OVERCAST RAIN SNOW		WIND: CALM LIGHT STRONG	
AIR TEMP (circle scale) °C °F	WATER TEMP (circle scale) °C °F	COLOR: CLEAR STAINED	TURBIDITY: CLEAR CLOUDY
pH	ANC		

SITE DESCRIPTIONS - (SKETCH SITE AND PUT ADDITIONAL COMMENTS ON BACK OF SHEET)
OMIT THIS SECTION IF DATA HAVE BEEN COLLECTED ON A PREVIOUS VISIT

ORIGIN:	NATURAL	MAN-MADE	DRAINAGE:	PERMANENT	OCCASIONAL	NONE
DESCRIPTION:	PERMANENT LAKE/POND	TEMPORARY LAKE/POND	MARSH/BOG	STREAM	SPRING/SEEP	ACTIVE BEAVER POND / INACTIVE BEAVER POND
SITE LENGTH (M)	SITE WIDTH (M)	MAXIMUM DEPTH:	< 1 M	1 – 2 M	> 2 M	
STREAM ORDER	1	2	3	4	5 +	
PRIMARY SUBSTRATE:	SILT/MUD	SAND/GRAVEL	COBBLE	BOULDER/BEDROCK	OTHER	
% OF POND LAKE MARGIN WITH EMERGENT VEGETATION:	0	1 – 25	25 – 50	> 50		
EMERGENT VEGETATION SPECIES (LIST IN ORDER OF ABUNDANCE)						
NORTH SHORELINE CHARACTERS:	SHALLOWS PRESENT	SHALLOWS ABSENT	EMERGENT VEG PRESENT	EMERGENT VEG ABSENT		
DISTANCE (M) TO FOREST EDGE	FOREST TREE SPECIES:					

Gap/USFS Habitat	USFWS Habitat

ROUGH SKETCH OF SITE GRID SPACING IS ____ METERS BETWEEN LINES



ADDITIONAL NOTES:

Miscellaneous Observation Form
Montana Natural Heritage Program
1515 E 6th Ave
PO Box 201800
Helena, MT 59620-1800

Observer _____
Address _____
_____
Phone No. _____

INSTRUCTIONS" Please use this sheet to submit sight, call, or specimen records of any Montana amphibian or reptile species. Use a separate line for each species and site. On the back of the sheet include any additional comments or supporting information. Please provide as specific location information as possible, particularly for the following species of special concern: Coeur d'Alene Salamander, Idaho Giant Salamander, Tailed Frog, Canadian Toad, Wood Frog, Snapping Turtle, Spiny Softshell, Short-horned Lizard, Sagebrush Lizard, Western Hognose Snake, and Smooth Green Snake. Documentation is required for Idaho Giant Salamander and Wood Frog (photo, through description, verification by experienced observer, etc.). An identification guide is available in the May/June 1995 issue of Montana Outdoors (reprints available at the MT Nat. Heritage Prog).

Species	Location	County	Township Range Section or UTM	Date Mo/Day/Yr	Time	# Adults	# Larvae
Example: Leopard Frog	McNab Pond	Carter	T01N R59E Sect 19 NE	5/20/94	8:30a	5	200
Example: Milk Snake	3.4 mi W, 1.2 mi N of Harlowton	Wheatland	5145200 N, 584700 E	8/15/94	11:15p	1	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							

Comments: Include method of observation, measurements, documentation for species of special concern, disposition of specimens, weather, etc. Numbers correspond to those on the other side of this sheet. Use additional space or sheets if necessary.

Example: Sunny warm day, about 75°. Adults (3 seen; 2 heard calling only) at margin of ponds in cattails. Very small tadpoles seen; 1 egg mass still present.
Example: Found dead in the road in sagebrush flat near rimrocks; 24" long; Colored with bands of yellow / black / red / black / yellow...; deposited in MSU Museum
1.
2.
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11.

APPENDIX 2.

SITES SURVEYED DURING 1993-94

AMPHIBIAN AND REPTILE SURVEYS

Appendix 2. Sites surveyed during 1994 amphibian and reptile surveys

Site	Location	Elevation	Date	Start Time
LEWIS AND CLARK NATIONAL FOREST				
Rocky Mountain District				
Bean Lake*	T18N R07W S13&24	4555	04 Jul 94	1615
Beaver Basin	T20N R09W S04 NE4	6000	27 May 94	1420
Beaver Crk pond	T21N R09W S15	4860	27 May 94	1510
Blacktail Gulch*	T21N R09W S33 SE4	4800	05 Jul 94	1550
Falls Creek	T17N R07W S03 S2	4900	05 Jul 94	1030
Kiyo Crag Lake & ponds	T29N R12W S02&01	6208	06 Jul 94	1035
Jones Crk, .7 mi W of on FS144*	T25N R09W S15	5200	26 May 94	1630
Little Willow Creek, head of	T20N R09W S14	5740	27 may 94	1350
Lubec Lake, NE ½	T30N R13W S10 NE4	5040	25 May 94	1800
Palookaville beaver ponds	T30N R12W S25 NE4	5360	06 Jul 94	1455
Pond .4 mi past Cave Mtn trnoff*	T25N R09W S26 NE4	5150	26 May 94	1825
Teton Pass, 1.5 road mi N of*	T25N R09W S06 SE4	6000	26 May 94	1730
Teton River, 7 Lazy P. Ranch	T25N R09W S26 SE4SE4	5100	26 May 94	1515
Wagner Basin	T22N R09W S36	4600	05 Jul 94	1330
Willow Creek ponds	T20N R09W S23	5540	27 May 94	1245
Wood Creek*	T20N R10W S22	5480	27 May 94	0945
Wood Creek pond	T20N R10W S26	5490	27 May 94	1025
Wood Creek, pond below Wood Lk	T20N R10W S36	5720	27 May 94	1130

* Sites with no herps found during survey

Appendix 2. (cont.) Sites surveyed during 1994 amphibian and reptile surveys.

Site	Location	Elevation	Date	Start Time
JEFFERSON DIVISION				
Big Snowy Mountains				
Crystal Lake	T12N R17E S13	6000	07 Jul 94	1400
Crazy Mountains				
Cottonwood Creek, W Fork*	T06N R10E S10	6100	08 Jul 94	0950
Forest Lake	T06N R10E S26&35	6490	07 Jul 94	1835
Castle Mountains				
Blackhawk Cabins meadows*	T09N R08E S36	6850	08 Jul 94	1345
Checkerboard Crk, E Fork hdwtr*	T09N R08E S25&36	6700	08 Jul 94	1410
Checkerboard Creek, W Fork	T09N R08E S24	6200	08 Jul 94	1530
Lennep, pond .8 mi N	T08N R09E S25	5350	08 Jul 94	1205
Thorsen's Pond*	T09N R09E S20 NW4	6560	08 Jul 94	1310
Highwood Mountains				
Briggs Creek seep*	T20N R09E S28 NE4NW4	4520	28 May 94	1300
Highwood Crk, nr Cow Camp*	T20N R09E S29 NW4	4440	28 May 94	1330
Highwood Creek, middle*	T20N R09E S33 center	4680	28 May 94	1405
Highwood Creek, beaver complex*	T19N R09E S09 NE4	5020	28 May 94	1430
Highwood Creek, hdwtrs seeps*	T19N R09E S15 NW4	5320	28 May 94	1525

* Sites with no herps found during survey

Appendix 2. (cont.) Sites surveyed during 1994 amphibian and reptile surveys.

Site	Location	Elevation	Date	Start Time
JEFFERSON DIVISION (continued)				
Little Belt Mountains				
Bear Park, Basin Crk hdwtrs*	T11N R10E S34	6300	09 Jul 94	1220
Belt Crk Info Cntr, pond .5 mi	NT14N R08E S06 NW4NW4	5030	28 May 94	1830
Clyde Park	T11N R10E S28 N2	6700	09 Jul 94	1105
Crater Lake & ponds	T11N R07E S25 SE4SW4	5880	29 May 94	1325
Harley Park*	T14N R07E S33	7350	08 Jul 94	1930
Onion Park	T13N R07E S4&5	7400	09 Jul 94	0815
Russian Flat pond	T11N R10E S12 SW4SW4	6330	09 Jul 94	1330
Sheep Creek complex*	T12N R07E S36 N4	5900	29 May 94	1035
Yogo Creek, upper	T13N R10E S5	6200	09 Jul 94	1520

* Sites with no herps found during survey

APPENDIX 3.

AMPHIBIANS AND REPTILES

OBSERVED DURING SURVEYS OF THE

LEWIS AND CLARK NATIONAL FOREST

IN 1994

Appendix 3. Amphibians and reptiles observed during surveys of the Lewis and Clark National Forest in 1993-94

Site	Person Hrs:min	Total number of adults/juv of each species observed[1] AMMA	AMTI	ASTR	BUBO	PSTR	RAPR	THSI	THEL
Rocky Mountain District									
Beaver Basin	0:20						5*		
Beaver Crk pond	0:50						8		
Falls Creek	1:30				*				
Kiyo Crag Lake/pond	3:20						25*		
Little Willow Creek	0:30						6		1
Lubec Lake, NE ¼	1:15						3		
Palookaville ponds	1:20						13*		
Teton River, 7 Lazy P	1:10					*			
Wagner Basin	3:10	*							
Willow Creek ponds	1:20						21	1	
Wood Creek pond	1:10						8*		
Wood Ck, belw Wood Lk	0:40	*					18*		

[1]AMMA=Ambystoma macrodactylum; AMTI=Ambystoma tigrinum; ASTR=Ascaphus truei; BUBO=Bufo boreas; PSRE= Pseudacris regilla; RAPR=Rana pretiosa; THSI=Thamnophis sirtalis; THEL=Thamnophis elegans.

*denotes site with breeding, i.e. tadpoles, larvae, or eggs present

Appendix 3. (cont.) Amphibians and reptiles observed during surveys of the Lewis and Clark National Forest in 1993-94

Site	Person Hrs:min	Total number of adults/juv of each species observed[1] AMMA	AMTI	ASTR	BUBO	PSTR	RAPR	THSI	THEL
JEFFERSON DIVISION									
Big Snowy Mountains									
Crystal Lake	1:35							1	
Crazy Mountains									
Forest Lake	1:35						2		
Castle Mountains									
Checkerboard Ck, W Fk	0:20						2		
Lennep, pond .8 mi N	0:11	*							
Little Belt Mountains									
Belt Crk Info Cntr	0:20						3	1	
Clyde Park	0:52						1*		
Crater Lake & ponds	1:00						1*		
Onion Park	0:57						2		
Russian Flat pond	0:15						1*		
Yogo Creek, upper	1:00						1		

[1]AMMA=Ambystoma macrodactylum; AMTI=Ambystoma tigrinum; ASTR=Ascaphus truei; BUBO=Bufo boreas; PSRE= Pseudacris regilla; RAPR=Rana pretiosa; THSI=Thamnophis sirtalis; THEL=Thamnophis elegans.

*denotes site with breeding, i.e. tadpoles, larvae, or eggs present

APPENDIX 4.

AMPHIBIANS AND REPTILES

REPORTED FROM IN AND AROUND THE

LEWIS AND CLARK NATIONAL FOREST

County	Precision	Date	Breed	Data Type

LONG TOED SALAMANDER

Granite	.5 to 5 mil	/ / 0	No	Observation
Kitchen Creek, near Missoula				
Jefferson	.5 to 5 mil	4/28/1962	No	Museum Specimen
2 mi. S. of East Helena on branch McClellen Creek				
Jefferson	.5 to 5 mil	4/28/1962	No	Museum Specimen
S. of East Helena on Al Palmer Ranch				
Jefferson	.5 to 5 mil	4/28/1962	Yes	Museum Specimen
2 mi. s. of East Helena on branch McClellen Creek				
Jefferson	.5 to 5 mil	8/25/1959	No	Museum Specimen
Horse trough off McClellen Creek				
Jefferson	.5 to 5 mil	7/ /1972	No	Museum Specimen
Near Clancy				
Lewis & Clark	< .5 mile.	5/27/1994	Yes	Observation
Wood Creek, just below Wood Lake, 5700 ft.				
Lewis & Clark	< .5 mile.	7/ 5/1994	Yes	Museum Specimen
Wagner Basin, 4600 ft.				
Lewis & Clark	.5 to 5 mil	7/13/1983	No	Museum Specimen
Upper Grizzly Gulch				
Missoula	.5 to 5 mil	4/24/1950	No	Observation
Overflow of Union Creek, near McNamara, ca. 3500 ft.				
Missoula	< .5 mile.	7/ 1/1993	No	Observation
S of NW1/4 of section 29, pond E of Boles PT.				
Missoula	< .5 mile.	7/ 1/1993	No	Observation
NW of NE of section 32, lily pad pond.				

TIGER SALAMANDER

Cascade	5 to 10 mil	11/ /1992	No	Observation
Malmstrom AFB near Great Falls				
Cascade	.5 to 5 mil	/18/1942	No	Museum Specimen
5 miles S. of Great Falls				
Chouteau	> 10 miles.	/ / 0	No	Museum Specimen
Fort Benton				
Chouteau	5 to 10 mil	9/ /1967	No	Observation
Teton River near Fort Benton				

County	Precision	Date	Breed	Data Type

TIGER SALAMANDER (continued)

Glacier	> 10 miles.	/ /	0 No	Museum Specimen
Blackfoot Indian Reservation, 16 miles SW of Cut Bank				
Glacier	.5 to 5 mil	/ /	0 No	Observation
4 mi NE of Marias Pass summit				
Meagher	< .5 mile.	7/ 8/1994	Yes	Observation
Pond 0.8 mi. N. of Lennep				
Teton	< .5 mile.	6/22/1993	No	Observation
S.E. Pine Butte				
Unknown	.5 to 5 mil	/18/1917	No	Museum Specimen
Volta Dam, 13.5 miles below Great Falls				
Unknown	> 10 miles.	9/10/1952	No	Museum Specimen
Lothair				
Wheatland	.5 to 5 mil	7/ /1904	No	Museum Specimen
Winnecook Ranch: Stock reservoir				
Wheatland	< .5 mile.	/ /1994	No	Observation
Chief Joseph Park Pond, Harlowton				

TAILED FROG

Flathead	.5 to 5 mil	7/11/1934	No	Museum Specimen
Glacier National Park 3.5 miles above mouth of Muir creek				
Flathead	> 10 miles.	7/24/1934	No	Museum Specimen
Glacier National Park, Coal Creek tributaries				
Flathead	.5 to 5 mil	6/28/1934	No	Museum Specimen
Glacier National Park, 8 mi above mouth of Ole Creek				
Flathead	.5 to 5 mil	7/ 6/1934	No	Museum Specimen
Glacier National Park, 6 mi above mouth of Park Creek				
Flathead	5 to 10 mil	/ /	0 No	Observation
Coal Creek				
Flathead	5 to 10 mil	/ /	0 No	Observation
Ole Creek				
Flathead	5 to 10 mil	/ /	0 No	Observation
Park Creek				

County	Precision	Date	Breed	Data Type

TAILED FROG (continued)

Flathead	.5 to 5 mil	/ /1969	No	Observation
Soldier and Clark Creeks				
Flathead	.5 to 5 mil	/ /1969	No	Observation
Bear and Skyland Creeks				
Flathead	.5 to 5 mil	/ / 0	No	Museum Specimen
Midvale Creek, near Glacier National Park				
Granite	5 to 10 mil	7/24/1958	No	Museum Specimen
Ranch Creek, ca. 11 mi. S. of I 90 on Rock Creek Rd.				
Granite	.5 to 5 mil	7/24/1958	No	Museum Specimen
Ranch Creek (tributary of Rock Creek)				
Lewis & Clark	5 to 10 mil	/ / 0	No	Observation
Tributary of Copper Creek, tributary of the Blackfoot River				
Lewis & Clark	< .5 mile.	7/ 5/1994	Yes	Museum Specimen
Falls Creek, crossing down to falls.				
Missoula	.5 to 5 mil	5/ 4/1947	No	Observation
Spring on Gold Creek, near Gold Creek Ranger Station				
Missoula	5 to 10 mil	7/22/1950	No	Museum Specimen
Placid Creek, ca. 4 mi. SW of Seeley Lake				
Missoula	.5 to 5 mil	/ /1969	No	Observation
Owl Creek				
Pondera	< .5 mile.	10/ 7/1994	Yes	Observation
E Fork Woods Creek; also sec. 16, Whiterock Creek				
Powell	5 to 10 mil	/ / 0	No	Observation
Morrell Creek, tributary of Clearwater River				
Teton	< .5 mile.	7/ 8/1994	Yes	Observation
On Mt. Wright hiking trail at small stream that trail crosses.				

WESTERN TOAD

Broadwater	> 10 miles.	/ /1966	Yes	Observation
Near Canyon Ferry Reservoir, small spring in open ponderosa pine.				
Carbon	.5 to 5 mil	/ /1966	No	Observation
Kings Hill, 7000 ft.				

County Precision Date Breed Data Type

WESTERN TOAD (continued)

Cascade .5 to 5 mil / / 0 No Museum Specimen
Little Belt Mountains, 1.2 miles N. (Hwy 89) of Kings Hill Pass, 7200 ft.

Chouteau .5 to 5 mil 6/24/1962 Yes Museum Specimen
Highwood Creek near Arrow Creek Divide

Chouteau .5 to 5 mil 6/24/1962 No Museum Specimen
Highwood Creek near Arrow Creek Divide

Chouteau .5 to 5 mil 6/24/1962 Yes Museum Specimen
Upper Highwood Creek near pass to Arrow Creek

Chouteau .5 to 5 mil 6/24/1962 Yes Museum Specimen
Upper Highwood Creek near pass to Arrow Creek

Flathead > 10 miles. 7/ 6/1934 No Museum Specimen
Park Creek, Glacier National Park.

Flathead .5 to 5 mil 7/23/1949 No Observation
South Fork River and Addition Creek

Granite .5 to 5 mil 7/11/1977 Yes Museum Specimen
1/4 mi W of Bearmouth, rest area off I 90.

Lewis & Clark .5 to 5 mil 7/12/1958 No Museum Specimen
Bear Lake, 7000 feet

Meagher > 10 miles. 8/ 4/1899 No Museum Specimen
Deep Creek Canyon, Big Belt Mountains

Meagher 5 to 10 mil 9/ 5/1918 No Museum Specimen
6 mi SW of Lennep.

Meagher > 10 miles. 8/23/1919 No Museum Specimen
Fort Logan, Camas Creek (4 mi S).

Meagher .5 to 5 mil 8/20/1951 No Museum Specimen
Sheep Creek near Jumping Creek Campgrounds

Meagher .5 to 5 mil 8/24/1951 Yes Museum Specimen
Adams Ranch, Sheep Creek

Meagher .5 to 5 mil 8/ 6/1958 No Museum Specimen
Lake Creek

County Precision Date Breed Data Type

WESTERN TOAD (continued)

Missoula .5 to 5 mil 5/ 2/1948 No Observation
Morrel Creek near Seeley Lake; Archibald Creek near Seeley Lake, 4000 ft.

Missoula .5 to 5 mil / /1966 No Observation
Rainy Lake

Missoula < .5 mile. 7/ 1/1993 No Observation
S of NW1/4 of section 29, Pond E of Boles Point.

Phillips .5 to 5 mil 8/10/1972 No Museum Specimen
Slippery Ann Station

Pondera < .5 mile. 7/13/1994 No Observation
Damp area along E Fork Woods Creek.

Teton < .5 mile. 5/26/1994 Yes Observation
7 Lazy P Ranch, Lewis and Clark NF, 5100 ft.

Teton < .5 mile. 6/21/1993 Yes Observation
NW of NW section 13, Pine Butte Swamp Preserve.

Wheatland > 10 miles. / /1966 No Observation
Grassy spring in the short grass prarie W. of Harlowton

GREAT PLAINS TOAD

Toole .5 to 5 mil 7/20/1950 Yes Observation
cattle pond on the prairie apprx. 1 mi S of camp (10 mi S of Galata)

WOODHOUSEiS TOAD

Fergus .5 to 5 mil 7/24/1919 No Museum Specimen
On Missouri River 5 miles north of Wilder

Fergus .5 to 5 mil 8/ 9/1991 No Museum Specimen
Missouri River at Fred Robinson Bridge.

Mussellshell .5 to 5 mil 8/ 7/1918 No Museum Specimen
1 mile west of Kline

WESTERN CHORUS FROG

Cascade < .5 mile. 5/28/1994 No Call Heard Only
On Hwy 89 go 5 mi. W. of Hwy 200 junction to pond on N. side of road

County	Precision	Date	Breed	Data Type

WESTERN CHORUS FROG (continued)

Cascade 5 to 10 mil 6/ 7/1993 No Observation
Chestnut Valley Sand hills

Chouteau 5 to 10 mil 5/ /1967 No Observation
Near Fort Benton

Chouteau .5 to 5 mil 7/22/1962 Yes Museum Specimen
Swan Ranch E. of Highwood

Fergus .5 to 5 mil 7/26/1991 No Museum Specimen
5 mi. E. of Roy

Glacier < .5 mile. 5/25/1994 No Call Heard Only
Both ponds at intersection, T30N R11W S16

Judith Basin < .5 mile. 5/27/1994 No Call Heard Only
T18N R10E S20

Judith Basin < .5 mile. / /1994 No Observation
Also T19N R09E Sec. 22, off FS RD 122.

Judith Basin < .5 mile. 5/28/1994 No Museum Specimen
5 mi. N., 3 mi. W. of Geyser, 4370 ft.

Lewis & Clark < .5 mile. 5/27/1994 No Call Heard Only
Anderson Lake

Liberty < .5 mile. 7/ 7/1994 Yes Museum Specimen
Moffat Bridge on Marias River, ca. 6 mi. ESE of Tiber Dam

Petroleum 5 to 10 mil 8/ /1968 No Museum Specimen
Near War Horse Lake

Pondera < .5 mile. 5/26/1994 No Museum Specimen
T28N R8W S5

Pondera < .5 mile. 7/13/1994 No Observation
Spring seep area T29N R12W S9.

Teton < .5 mile. 6/21/1993 No Observation
NE1/4 of NE1/4 S34, near the Teton River, Pine Butte Swamp Preserve.

Teton < .5 mile. 6/21/1993 No Observation
NW of NW sec 13 Pine Butte Swamp Preserve.

County Precision Date Breed Data Type

WESTERN CHORUS FROG (continued)

Teton < .5 mile. 6/22/1993 No Observation
SE of SE of S2, Pine Butte Swamp Preserve.

Teton < .5 mile. 6/22/1993 No Observation
Bellview Rd Pond

Teton < .5 mile. 6/22/1993 No Observation
NE1/4 of Sect 17, Pine Butte Swamp Preserve.

Teton < .5 mile. 6/22/1993 No Observation
SE Pine Butte

Toole > 10 miles. 7/ /1950 No Observation
in the area near camp (10 mi S of Galata)

Wheatland > 10 miles. 8/29/1918 No Museum Specimen
5 miles SW of Oka

PLAINS SPADEFOOT

Cascade .5 to 5 mil / /1934 No Museum Specimen
4.5 miles W. of Great Falls

Cascade .5 to 5 mil 8/31/1948 No Museum Specimen
3 mi. S. of Cascade, Missouri River

Cascade .5 to 5 mil 9/ /1962 No Museum Specimen
NE of Great Falls

Cascade <.5 miles / /1992 Yes Observation
Great Falls

Toole .5 to 5 mil 7/21/1950 No Observation
dry flood plain at camp (10 mi S of Galata)

NORTHERN LEOPARD FROG

Broadwater < .5 mile. 5/10/1993 No Observation
Deepdale FAS. Directly E. across channel from Deepdale BE nest

Cascade < .5 miles 6/ /1994 No Observation
cutoff slough along Belt Creek, T18N R6E Sec 12

Lweis and Clark < .5 miles / /1993 No Observation
small riparian ponds along Dearborn River, T18N R7W Sec.25

County	Precision	Date	Breed	Data Type

NORTHERN LEOPARD FROG (continued)

Chouteau .5 to 5 mil 6/24/1962 No Museum Specimen
Upper Highland Creek near Arrow Creek Divide.

Chouteau .5 to 5 mil 6/24/1962 No Museum Specimen
Upper extreme of Highwood Creek, near mouth of Beaver Creek

Chouteau .5 to 5 mil 8/31/1948 No Museum Specimen
3 mi. S. of Cascade, Missouri River

Fergus .5 to 5 mil 8/20/1918 No Museum Specimen
8 miles W. of Lewistown, on Beaver Creek

Fergus .5 to 5 mil 8/19/1918 No Museum Specimen
7 miles NE of Lewistown, Judith Mountains

Fergus .5 to 5 mil 7/28/1919 No Museum Specimen
7 miles NE of Hilger

Fergus .5 to 5 mil 8/ 4/1919 No Museum Specimen
5 miles NW of Hilger, Moccassin Mountains

Fergus < .5 mile. 8/28/1994 No Observation
T13N R22E S23

Fergus 5 to 10 mil 8/13/1948 No Museum Specimen
Beaver Creek, S. of Lewistown

Lewis & Clark 5 to 10 mil 7/18/1958 No Museum Specimen
Sun River, 5500 feet

Liberty 5 to 10 mil 6/13/1950 No Observation
6 miles east of reservoir area at Turner Memorial Park

Meagher .5 to 5 mil 8/30/1918 No Museum Specimen
Martinsdale, S. fork of Missellshell River

Meagher .5 to 5 mil 10/21/1950 No Museum Specimen
S. Fork Mussellshell near Lennep

Powell 5 to 10 mil 7/ 3/1973 No Museum Specimen
North Fork of Blackfoot River

Teton < .5 mile. 7/21/1993 No Observation
NE of NE of sect 7, Pine Butte Swamp Preserve.

Teton .5 to 5 mil 8/27/1949 No Museum Specimen
5 mi. E. of Choteau.

County	Precision	Date	Breed	Data Type

NORTHERN LEOPARD FROG (continued)

Wheatland	.5 to 5 mil	/18/1942	No	Museum Specimen
Musselshell River at Shawmut				
Wheatland	.5 to 5 mil	8/28/1918	No	Museum Specimen
5 miles SW of Oka				
Wheatland	.5 to 5 mil	8/28/1918	No	Museum Specimen
3 miles N. of Judith Gap				

SPOTTED FROG

Cascade	.5 to 5 mil	/ /	0 No	Museum Specimen
Little Belt Mountains, 1.2 miles N. of Kings Hill Pass				
Cascade	.5 to 5 mil	8/ 8/1944	No	Museum Specimen
12 miles S. of Neihart				
Cascade	.5 to 5 mil	6/27/1973	No	Museum Specimen
North of Kings Hill Campground, Hwy. 89, Little Belt Mountains				
Cascade	< .5 mile.	5/28/1994	No	Museum Specimen
Pond 0.5 mi N. of Belt Creek Info Center on E. side of Hwy. 89				
Flathead	.5 to 5 mil	7/25/1934	No	Museum Specimen
Galcier National Park, Marthaís Basin Lake				
Glacier	< .5 mile.	5/25/1994	No	Observation
NE 1/4 of Lubec Lake, 5040 ft.				
Glacier	< .5 mile.	7/ 6/1994	Yes	Observation
Palookaville Beaver Ponds				
Granite	.5 to 5 mil	7/11/1977	No	Museum Specimen
0.25 mile W. of Bear Mouth, at rest area off Hwy. 90.				
Jefferson	.5 to 5 mil	7/ 8/1944	No	Museum Specimen
5 miles W. of Bernice				
Judith Basin	< .5 mile.	5/20/1994	No	Observation
Along tributary to Dry Pole Gulch.				
Judith Basin	< .5 mile.	7/ 9/1994	Yes	Observation
Clyde Park, Little Belt Mountains, 6700 ft.				
Judith Basin	< .5 mile.	7/ 9/1994	No	Observation
Upper Yogo Creek, Little Belt Mountains, 6200 ft.				

County	Precision	Date	Breed	Data Type

SPOTTED FROG (continued)

Judith Basin < .5 mile. 7/ 9/1994 Yes Observation
Pond in Russian Flat, Little Belt Mountains

Judith Basin .5 to 5 mil 7/12/1991 Yes Museum Specimen
Clyde Park Pond, Litle Belt Mountains

Lewis & Clark .5 to 5 mil / / 0 No Observation
2.3 miles W. of Flasher Pass tributary of Blackfoot River

Lewis & Clark < .5 mile. 5/27/1994 Yes Museum Specimen
Wood Creek, just below Wood Lake

Lewis & Clark < .5 mile. 5/27/1994 Yes Observation
Willow Creek Ponds, 5540 ft., also Sec. 14

Lewis & Clark < .5 mile. 5/27/1994 No Observation
Pond above Beaver Creek, S. of Green Timber Basin.

Lewis & Clark < .5 mile. 9/ 3/1994 No Observation
Prickley Pear Creek just W. of Stansfield Lake.

Lewis & Clark < .5 mile. 5/27/1994 No Observation
Head of Little Willow Creek.

Lewis & Clark < .5 mile. 5/27/1994 Yes Observation
Beaver Basin (road sign)

Lewis & Clark < .5 mile. 5/27/1994 Yes Museum Specimen
Wood Creek

Lewis & Clark < .5 mile. 7/27/1975 No Observation
Pond, ca. 400 m from the main stack of East Helena Smelter.

Lewis & Clark < .5 mile. 7/27/1975 No Observation
Ca. 1.6 km SSE from the East Helena Smelter in springs

Lewis & Clark < .5 mile. 7/27/1975 No Observation
McClellan Creek Quarry Lake

Lewis & Clark < .5 mile. 5/22/1994 No Museum Specimen
7 Up Pete Proposed Gold Mine area on HWY 200, ca. 10 mi. E. of Lincoln.

Meagher .5 to 5 mil 9/ 3/1918 No Museum Specimen
Martinsdale, S. Fork of Mussellshell River

Meagher .5 to 5 mil 6/ 1/1978 No Museum Specimen
Dry Fork of Musselshell River

County	Precision	Date	Breed	Data Type

SPOTTED FROG (continued)

Meagher < .5 mile. 5/29/1994 Yes Museum Specimen
Crater Lake and ponds above, 5880 ft.

Meagher < .5 mile. 7/ 7/1994 No Museum Specimen
Forest Lake, Crazy Mountains, also Sec. 35, 6490 ft.

Meagher < .5 mile. 7/ 8/1994 No Observation
W. fork Checkerboard Creek, Castle Mountains, 6200 ft.

Meagher < .5 mile. 7/ 9/1994 No Observation
Onion Park, Little Belt Mountains, also sec. 5.

Meagher .5 to 5 mil 8/ 6/1958 No Museum Specimen
Lake Creek

Meagher .5 to 5 mil 5/13/1950 No Museum Specimen
Near Ringling Hot Well

Meagher .5 to 5 mil 8/ 6/1958 No Museum Specimen
Lake Creek

Missoula .5 to 5 mil 5/18/1948 No Observation
Overflow of Union Creek, near McNamara

Missoula < .5 mile. 7/ 2/1993 No Observation
T16N R15W S25

Pondera < .5 mile. 7/ 6/1994 Yes Observation
Kiyo Crag Lake and Pond, and sm. pond on RD 9218

Powell .5 to 5 mil 7/21/1891 No Museum Specimen
Elliston, near Little Blackfoot River

PAINTED TURTLE

Broadwater < .5 mile. 5/ /1993 No Observation
Canyon Ferry WMA east side.

Broadwater 5 to 10 mil / / 0 No Specimen Reported
See map in Black 1970

Lewis & Clark < .5 mile. 6/ 9/1994 No Observation
W. of Augusta along Benchmark Rd. W. of Nilan Reservoir, next to 2 ponds

Powell .5 to 5 mil 9/ 7/1994 No Observation
Lahrity Lake in Ovando Valley

County Precision Date Breed Data Type

PAINTED TURTLE (cont.)

Powell .5 to 5 mil 9/ 8/1994 No Observation
Evans Lake

Powell 5 to 10 mil / / 0 No Specimen Reported
See map in Black 1970

Teton 5 to 10 mil / / 0 No Specimen Reported
See map in Black, 1970

SPINY SOFTSHELL

Broadwater 5 to 10 mil / / 0 No Specimen Reported
Canyon Ferry Reservoir (may be erroreous)

Wheatland .5 to 5 mil /17/1942 No Museum Specimen
Musselshell River, near Shawmut

Wheatland .5 to 5 mil / / 0 No Museum Specimen
Musselshell River near Shawmut.

SHORT HORNED LIZARD

Chouteau > 10 miles. / / 0 No Museum Specimen
Near Fort Benton

Chouteau 5-10 miles spring 1985 No Observation
Cascade Hutterite Colony west of Ulm in breaks, 3500 ft.

Golden Valley > 10 miles. 8/ /1894 No Museum Specimen
Painted Robe Creek

Toole > 10 miles. / /1950 No Observation
tops of ridges between coulees near camp (10 mi S of Galata)

Wheatland .5 to 5 mil /29/1933 No Museum Specimen
Harlowton

SAGEBRUSH LIZARD

Mussellshell 5 to 10 mil 8/ 3/1908 No Museum Specimen
Roundup, 8 mi S of

RUBBER BOA

Broadwater 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark .5 to 5 mil 3/ /1949 No Museum Specimen
Worth Ranch, Canyon Creek

County Precision Date Breed Data Type

RACER

Flathead 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Toole .5 to 5 mil 7/26/1950 No Observation
in a coulee just N of camp (10 mi S of Galata)

WESTERN HOGNOSE SNAKE

Mussellshell 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Teton 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

GOPHER SNAKE

Broadwater < .5 mile. 5/21/1994 No Observation
Hwy. 12 between Helena and Townsend

Cascade 5 to 10 mil 7/ 6/1993 No Observation
Chestnut Valley Sandhills

Cascade 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Cascade < .5 miles 6/ /1994 No Observation
near Belt Creek, T18N R6E Sec 12

Chouteau .5 to 5 mil / / 0 No Museum Specimen
Fort Benton

Lewis & Clark .5 to 5 mil 10/15/1982 No Museum Specimen
Junction Sheep and Little Prickly Pear Creeks

County Precision Date Breed Data Type

GOPHER SNAKE (continued)

Toole > 10 miles. / /1950 No Observation
9 from river valley, 1 from coulees, 2 from Prairie (approx. 10 mi S of Ga)

Wheatland .5 to 5 mil / /1932 No Museum Specimen
Harlowton

Wheatland .5 to 5 mil / / 0 No Museum Specimen
20 miles E. of Harlowton

WESTERN TERRESTRIAL GARTER SNAKE

Broadwater .5 to 5 mil 9/ /1962 No Museum Specimen
W. of Winston

Cascade < .5 mile. 5/28/1994 No Observation
Pond 0.5 mi N. of Belt Creek Info Center on E. side of Hwy. 89

Cascade .5 to 5 mil 10/15/1992 No Museum Specimen
5 mi. SE of Fairfield

Chouteau .5 to 5 mil / / 0 No Museum Specimen
Fort Benton

Chouteau .5 to 5 mil 7/21/1962 No Museum Specimen
Shankin Creek, Highwood Mountains

Chouteau .5 to 5 mil 5/ /1963 No Museum Specimen
N. Fork Highwood Creek

Fergus .5 to 5 mil 8/23/1954 No Museum Specimen
22 miles S., 12 miles E. of Lewiston

Fergus .5 to 5 mil 7/ 2/1961 No Museum Specimen
3 miles W., 18 miles S. of Lewiston, Big Snowy Mts.

Fergus .5 to 5 mil 8/15/1918 No Museum Specimen
Heath, 15 mi S of, Big Snowy Mountains

Fergus 5 to 10 mil 8/ 4/1919 No Museum Specimen
Hilger, 5 mi NW of, Mocassin Mountains

Fergus 5 to 10 mil 7/27/1919 No Museum Specimen
Hilger, 7 mi NE of

Fergus < .5 mile. 7/ 7/1994 No Observation
Crystal Lake, Big Snowy Mountains, 6000 ft.

County Precision Date Breed Data Type

WESTERN TERRESTRIAL GARTER SNAKE (continued)

Gallatin 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Judith Basin .5 to 5 mil 8/ 7/1919 No Museum Specimen
Stanford, 20 SW of, Little Belt Mtns, on Dry Wolf Creek

Judith Basin .5 to 5 mil 8/13/1919 No Museum Specimen
Geyser, Otter Creek, (10 mi SW)

Lewis & Clark .5 to 5 mil / / 0 No Museum Specimen
Sun River at U.S. Hy 287, N of Augusta

Lewis & Clark > 10 miles. 7/20/1891 No Museum Specimen
Helena, near, Mc Clellan Creek

Lewis & Clark > 10 miles. 7/18/1958 No Museum Specimen
Sun River, elevation 5500 ft.

Lewis & Clark < .5 mile. 5/27/1994 No Observation
Head of Little Willow Creek

Lewis & Clark 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark < .5 mile. 7/27/1975 No Observation
Pond, ca. 400 m from the main stack of East Helena Smelter.

Lewis & Clark < .5 mile. 7/27/1975 No Observation
Where Prickly Pear Creek flows along slag pile at East Helena Smelter.

Lewis & Clark < .5 mile. 7/27/1975 No Observation
McClellan Creek Quarry Lake

Liberty > 10 miles. 7/ /1950 No Observation
Liberty County about 6 mi.W of camp (approx. 10 mi. S of Galata)

Meagher .5 to 5 mil 9/ 4/1918 No Museum Specimen
Grovedale (Groveland), 3 mi W of

Meagher .5 to 5 mil 8/30/1918 No Museum Specimen
Martinsdale, S Fork of Musselshell River

Meagher 5 to 10 mil 8/22/1919 No Museum Specimen
Fort Logan, Camas Creek, (4 mi S)

County Precision Date Breed Data Type

WESTERN TERRESTRIAL GARTER SNAKE (continued)

Meagher .5 to 5 mil 8/31/1918 No Museum Specimen
Martinsdale, S fork of Musselshell River

Missoula < .5 mile. 7/ 1/1993 No Observation
Grassy hillside, 100m from riparian area Clearwater River

Missoula < .5 mile. 9/ /1950 No Specimen Reported
Upper Holland Lake

Missoula < .5 mile. 9/ /1950 No Specimen Reported
Gyp Mountain

Powell > 10 miles. 7/31/1967 No Museum Specimen
North Fork of the Blackfoot River

Powell > 10 miles. 7/ 3/1973 No Museum Specimen
North Fork of the Blackfoot River

Powell < .5 mile. 6/ /1950 No Specimen Reported
Cottonwood Creek

Teton .5 to 5 mil 10/16/1982 No Museum Specimen
10 mi. W. of Chouteau

PLAINS GARTER SNAKE

Cascade .5 to 5 mil 8/31/1894 No Museum Specimen
Great Falls

Chouteau .5 to 5 mil / / 0 No Museum Specimen
Fort Benton

Toole .5 to 5 mil 7/16/1950 No Observation
margin of cattle pond 1.5 mi S of camp(10 mi S 0f Galata

COMMON GARTER SNAKE

Carbon .5 to 5 mil / / 0 No Museum Specimen
Fort Benton

Cascade .5 to 5 mil 9/ 6/1994 No Observation
Schrammeck Lake

Chouteau .5 to 5 mil 6/24/1962 No Museum Specimen
Upper Highwood Creek near pass to Arrow Creek

County	Precision	Date	Breed	Data Type

COMMON GARTER SNAKE (continued)

Fergus	.5 to 5 mil	8/16/1918	No	Museum Specimen
1 mile SE of Lewistown				
Golden Valley	.5 to 5 mil	10/10/1994	No	Observation
Near Big Coulee Creek				
Judith Basin	< .5 mile.	5/20/1994	No	Observation
Along tributary to Dry Pole Gulch.				
Lewis & Clark	< .5 mile.	5/27/1994	No	Observation
Willow Creek Ponds, 5540 ft.				
Lewis & Clark	< .5 mile.	5/ 5/1994	No	Observation
Smith Creek				
Lewis & Clark	5 to 10 mil	/ / 0	No	Specimen Reported
See map in Davis 1963				
Lewis & Clark	5 to 10 mil	/ / 0	No	Specimen Reported
See map in Davis 1963				
Missoula	< .5 mile.	7/ 2/1993	No	Observation
NW1/4 of SE1/4 Sec25, 10 m from water.				
Teton	< .5 mile.	7/ 5/1993	No	Observation
Durr Place, outside tack room, Pine Butte Swamp Preserve				

WESTERN RATTLESNAKE

Cascade	5 to 10 mil	9/ 1/1894	No	Museum Specimen
Great Falls				
Cascade	.5 to 5 mil	/10/1937	No	Museum Specimen
7 miles NW of Cascade				
Cascade	.5 to 5 mil	7/29/1972	No	Museum Specimen
3 mi. N. Manchester				
Cascade	.5 to 5 mil	/ /1927	No	Museum Specimen
Cascade				
Chouteau	.5 to 5 mil	10/ /1937	No	Museum Specimen
30 miles east of Brady, 2 miles south of Russell				
Chouteau	.5 to 5 mil	/ / 0	No	Museum Specimen
Ft. Benton				

County Precision Date Breed Data Type

WESTERN RATTLESNAKE (continued)

Fergus .5 to 5 mil 7/24/1919 No Museum Specimen
5 miles north of Wilder on Missouri River

Gallatin 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Lewis & Clark .5 to 5 mil 7/28/1949 No Museum Specimen
Wirth Ranch

Liberty < .5 mile. 7/ 6/1994 No Observation
5.3 mi. E. of Tiber Dam on Prospect Road, 3030 ft., also sec. 10.

Mussellshell 5 to 10 mil / / 0 No Specimen Reported
See map in Davis 1963

Toole > 10 miles. 7/24/1950 No Observation
Marias river near camp (10 mi south of Galata)

Wheatland .5 to 5 mil / / 0 No Museum Specimen
Harlowton

Wheatland .5 to 5 mil / / 0 No Museum Specimen
2 miles S. of Hedgesville, 20 miles E. of Harlowton

Wheatland > 10 miles. 8/12/1903 No Museum Specimen
vic of Harlowton

Wheatland > 10 miles. 4/16/1967 No Museum Specimen
vic Harlowton

Wheatland > 10 miles. 5/11/1984 No Museum Specimen
vic of Harlowton

Wheatland < .5 mile. / /1989 No Observation
Behind USFS office, Harlowton

Wheatland .5 to 5 mil /24/1932 No Museum Specimen
8 miles S. of Harlowton

Wheatland .5 to 5 mil /29/1932 No Museum Specimen
8 miles S. of Harlowton

Wheatland .5 to 5 mil /22/1933 No Museum Specimen
2 miles S Hedgesville

County	Precision	Date	Breed	Data Type

WESTERN RATTLESNAKE (continued)

Wheatland	.5 to 5 mil	/ /1935	No	Museum Specimen
8 miles S. of Harlowton				
Wheatland	.5 to 5 mil	/ /1932	No	Museum Specimen
2 miles S Hedgeville				
Wheatland	.5 to 5 mil	/24/1926	No	Museum Specimen
8 miles S. of Harlowton				
Yellowstone	5 to 10 mil	/ / 0	No	Specimen Reported
See map in Davis 1963				